STR-DE135

SERVICE MANUAL

US Model
AEP Model
UK Model

Photo: US model

SPECIFICATIONS

Audio power specifications (US model)

POWER OUTPUT AND TOTAL HARMONIC DISTORTION

With 8-ohm load, both channels driven, from 20 – 20,000 Hz, rated 100 watts per channel minimum RMS power, with no more than 0.09 % total harmonic distortion from 250 milli-watts to rated output.

Amplifier section

Stereo mode (8 ohms at 20 Hz – 20 kHz less than 0.09 % total harmonic distortion)
100 W + 100 W (US model)
(DIN 1 kHz, 4 ohms)
60 W + 60 W (AEP, UK models)

Frequency response TV/SAT, CD, MD/TAPE, VIDEO (US model)
TV/LD, CD, MD/TAPE, VIDEO (AEP, UK models)
10 Hz – 50 Hz ± 1 dB

Inputs

	Sensitivity	Impedance	S/N
CD, MD/TAPE, TV/SAT, VIDEO	150 mV	50 kilohms	78 dB

(US model)

	Sensitivity	Impedance	S/N
CD, MD/TAPE, TV/LD, VIDEO	150 mV	50 kilohms	78 dB

(AEP, UK models)

outputs MD/TAPE REC OUT:
Voltage: 150 mV,
impedance: 10 kilohms
VIDEO AUDIO OUT:
Voltage: 150 mV,
impedance: 10 kilohms
PHONES: Accepts low and high impedance headphones

Muting Full mute
BASS BOOST + 10 dB at 70 Hz
TONE ± 8 dB at 100 Hz and 10 kHz

Tuner Section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range 87.5 – 108.0 MHz
Antenna terminals 75 ohms, unbalanced
Intermediate frequency 10.7 MHz
Sensitivity Mono: 18.3 dBf, 4.5 µV
Stereo: 38.3 dBf, 45 µV (US model)
Mono: 18.3 dBf, 2.2 µV/75 ohms
Stereo: 38.3 dBf, 22.5 µV/75 ohms (AEP, UK models)
Usable sensitivity 11.2 dBf, 2 µV (IHF) (US model)
11.2 dBf, 1 µV/75 ohms (IHF) (AEP, UK models)
S/N Mono: 76 dB
Stereo: 70 dB
Harmonic distortion at 1 kHz Mono: 0.3 %
Stereo: 0.5 %
Separation 45 dB at 1kHz
Frequency response 30 Hz – 15 kHz $^{+0.5}_{-2}$ dB
Selectivity 60 dB at 400 kHz

AM tuner section

Tuning range 10 kHz interval*
530 – 1710 kHz
9 kHz interval
531 – 1710 kHz (US model)
531 – 1602 kHz (AEP, UK models)

– Continued on next page –

FM STEREO/FM-AM-RECEIVER

MICROFILM

SONY®

Antenna	Loop antenna
Intermediate frequency	450 kHz
Usable sensitivity	50 dB/m (at 1,000 kHz)
S/N	54 dB (at 50 mV/m)
Harmonic distortion	0.5 % (50 mV/m, 400Hz)
Selectivity	At 10 kHz: 40 dB At 9 kHz: 35 dB (US model) 35 dB (AEP, UK models)

* You can change the AM tuning interval between 9 kHz and 10kHz. After tuning in any AM station, turn off the receiver. Hold down the PRESET TUNING + button and press the I/⏻ (power) button. All preset stations will be erased when you change the interval. To reset the interval, repeat the procedure. (US model)

General

System	Tuner section: PLL quartz-locked digital synthesizer system Preamplifier section: Low-noise NF type equalizer Power amplifier section: Pure-complementary SEPP
Power requirements	120 V AC, 60 Hz (US model) 230 V AC, 50/60 Hz (AEP, UK models)
Power consumption	155 W (US model) 135 W (AEP, UK models)
AC outlets	1 switched, total 120 W/1A Max (US, UK models) switch 100 W max (AEP model)
Dimensions	430 × 144 × 306 mm (17 × 5 6/8 × 12 4/8 inches)
Mass (Approx.)	8.1 kg (17 lb 13 oz) (US model) 6.7 kg (AEP, UK models)
Supplied accessories	FM wire antenna (1) AM loop antenna (1) Remote commander (remote) (1) Size AA (R6) batteries (2)

Specifications indicated are measured at 230 V AC, 50Hz. (AEP, UK models)

Design and specifications are subject to change without notice.

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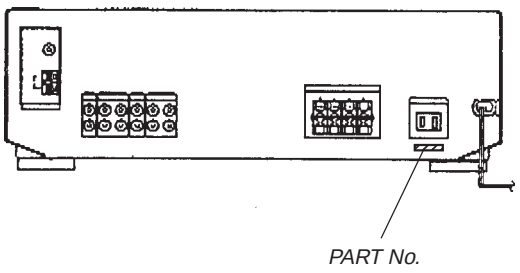
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1
SERVICING NOTES

MODEL IDENTIFICATION

– Rear view –



MODEL	PART No.
US model	4-216-802-0☐
AEP model	4-216-802-1☐
UK model	4-216-802-2☐

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage.
Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers.). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

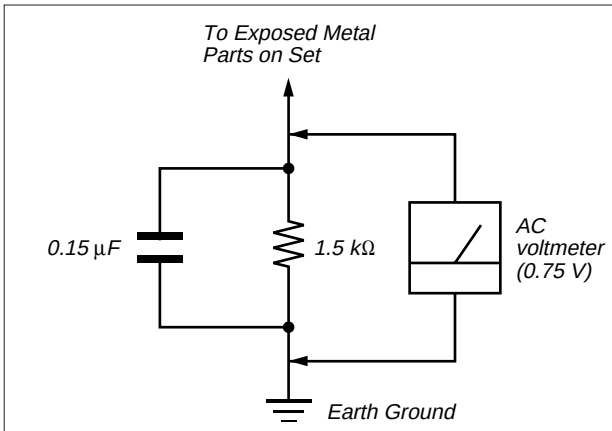
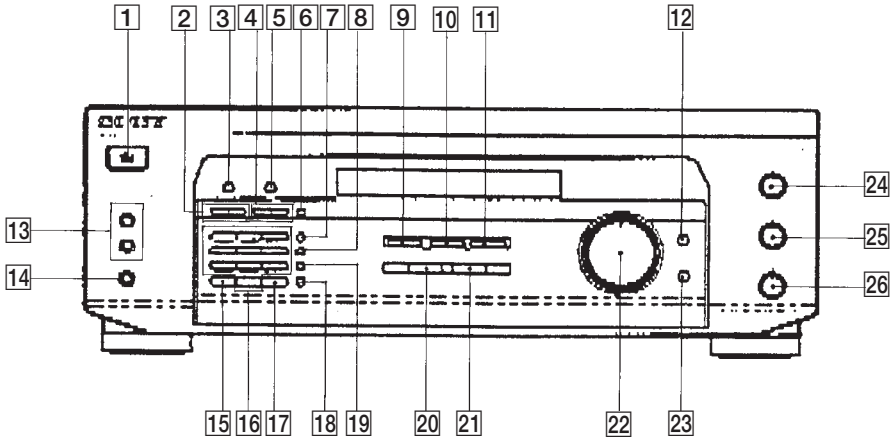


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 2
GENERAL

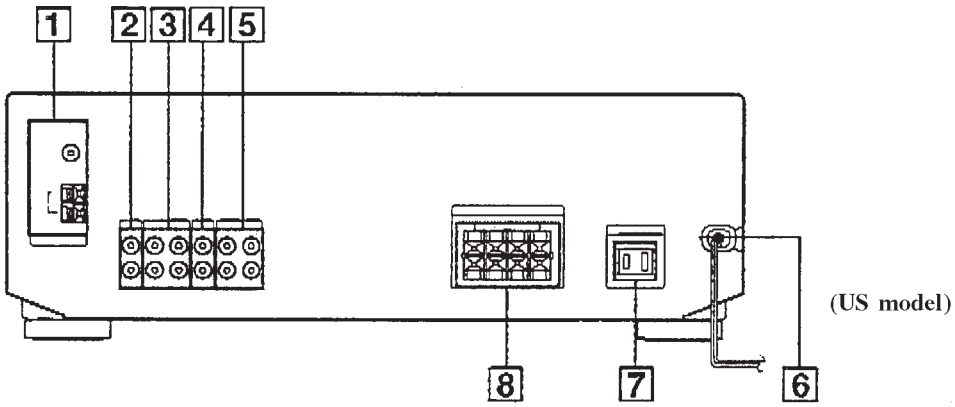
Location of controls

- **Front view –**



1 I/⏻ button
2 TUNING +, – buttons (US model)
TUNING/CHAR +, – buttons (AEP, UK models)
3 NAME button (AEP, UK models)
4 PRESET/TUNING +, – buttons (US model)
PRESET/PTY SELECT +, – buttons (AEP, UK models)
5 DISPLAY button (AEP, UK models)
6 RDS PTY button (AEP, UK models)
7 AM button (US model)
RDS EON button (AEP, UK models)
8 FM button (US model)
FM/AM button (AEP, UK models)
9 VIDEO button
10 TV/SAT button (US model)
TV/LD button (AEP, UK models)
11 MD/TAPE button
12 BASS BOOST button and indicator
13 SPEAKERS A, B ON/OFF buttons
14 PHONES jack
15 SHIFT button
16 Numeric buttons
17 DIRECT button
18 MEMORY button (US model)
MEMORY/ENTER button (AEP, UK models)
19 FM MODE button
20 TUNER button
21 CD button
22 VOLUME control
23 MUTING button and indicator
24 TREBLE control
25 BASS control
26 BALANCE control

- **Rear view –**

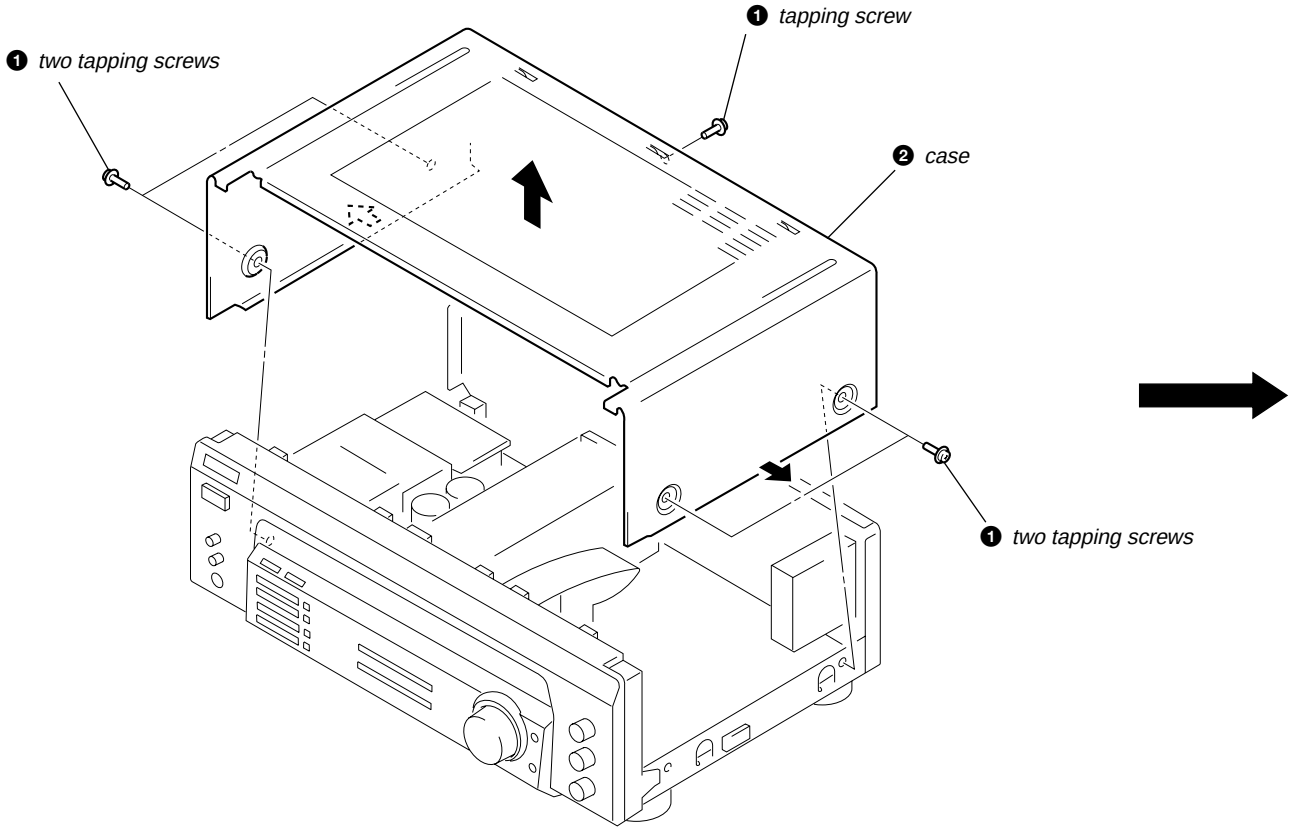


1 ANTENNA (AM/FM)
2 CD
3 MD/TAPE
4 TV/SAT (US model)
TV/LD (AEP, UK models)
5 VIDEO
6 AC power cord
7 SWITCHED AC OUTLET
8 SPEAKERS (A/B)

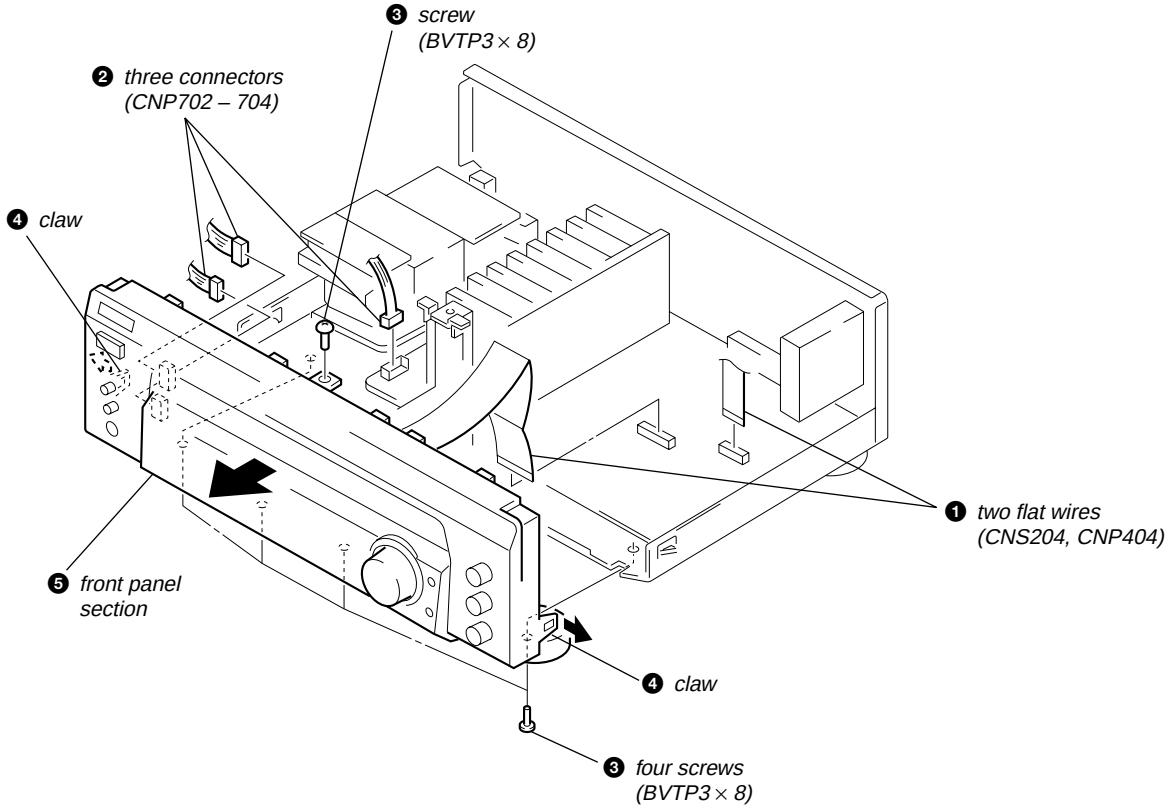
SECTION 3
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

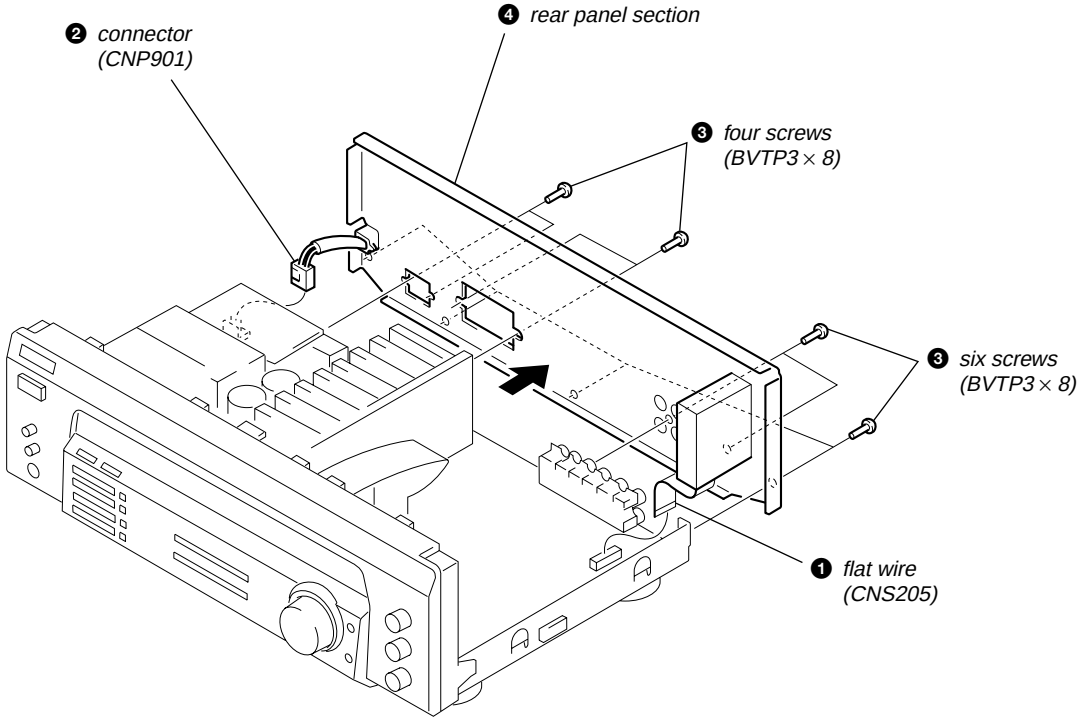
CASE



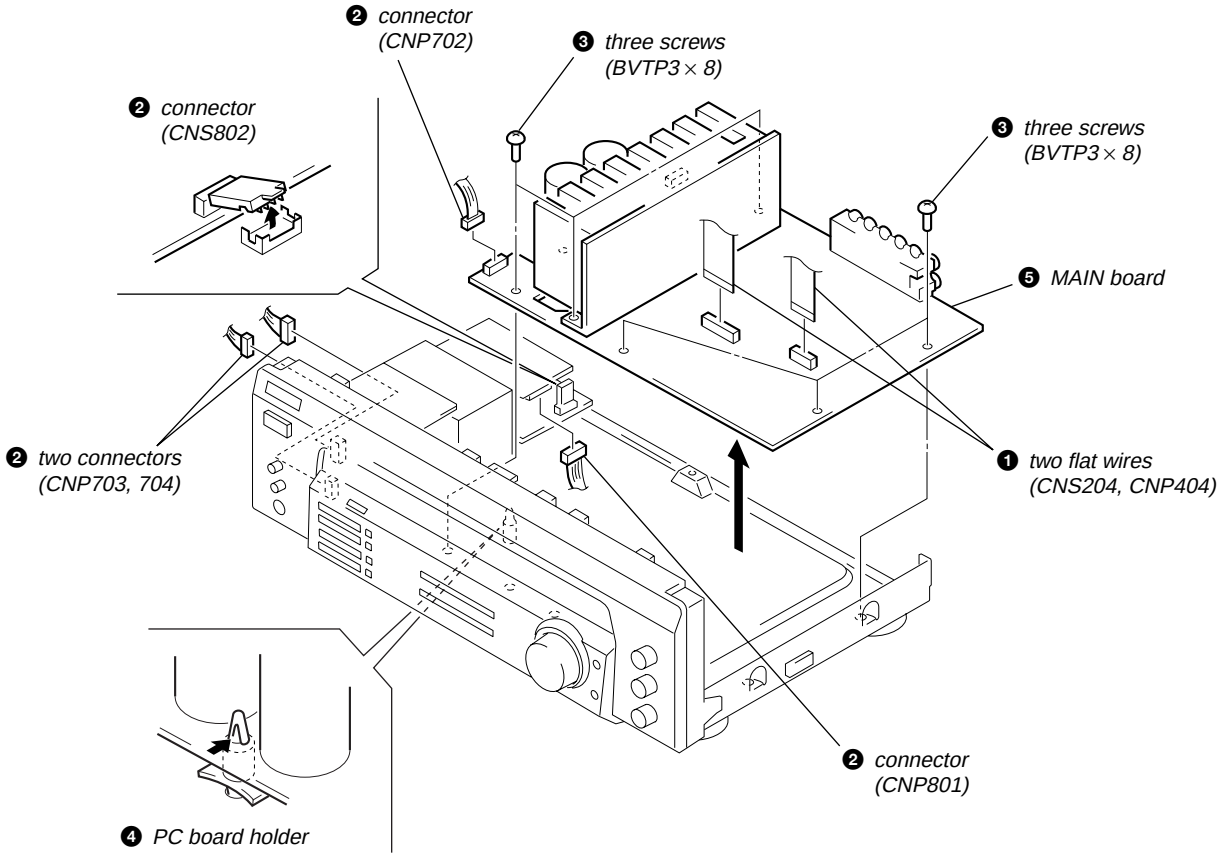
FRONT PANEL SECTION



REAR PANEL SECTION



MAIN BOARD


❷ connector (CNP702)
❸ three screws (BVTP3 × 8)
❷ connector (CNS802)
❸ three screws (BVTP3 × 8)
❺ MAIN board
❷ two connectors (CNP703, 704)
❶ two flat wires (CNS204, CNP404)
❷ connector (CNP801)
❹ PC board holder

SECTION 4
TEST MODE

Fluorescent Indicator Tube Test Mode

All fluorescent segments are tested. When this test is activated, all segments turn on at the same time, then each segment turns on one after another.

Procedure:

1. While pressing two buttons of [TV/SAT] (US model)* and [DIRECT] simultaneously, press the [I/⏻] button to turn the power ON.
2. All segments turn on at the same time, then each segment turns on one after another.
3. The message “FINISH” appears when this test is complete.

*) AEP, UK models are [TV/LD]

AUTO-BETICAL Check Mode (AEP, UK models)

To auto-scanning and memories of RDS station.

Procedure:

1. While pressing the [MEMORY/ENTER] button, press the [I/⏻] button to turn the power ON.
2. The message “AUTO BET” appears and each function is selected one after another.

AM Tuning Interval Selection Mode (US model)

Either 9 kHz step or 10 kHz step can be selected for the AM tuning interval.

Procedure:

1. Set the FUNCTION to AM.
2. Press the [I/⏻] button to turn the power OFF.
3. While pressing the [TUNING+] button, press the [I/⏻] button to turn the power ON.
4. Either the message “9k STEP” or “10k STEP” appears.
5. Select the desired step.

Software Version Display Mode

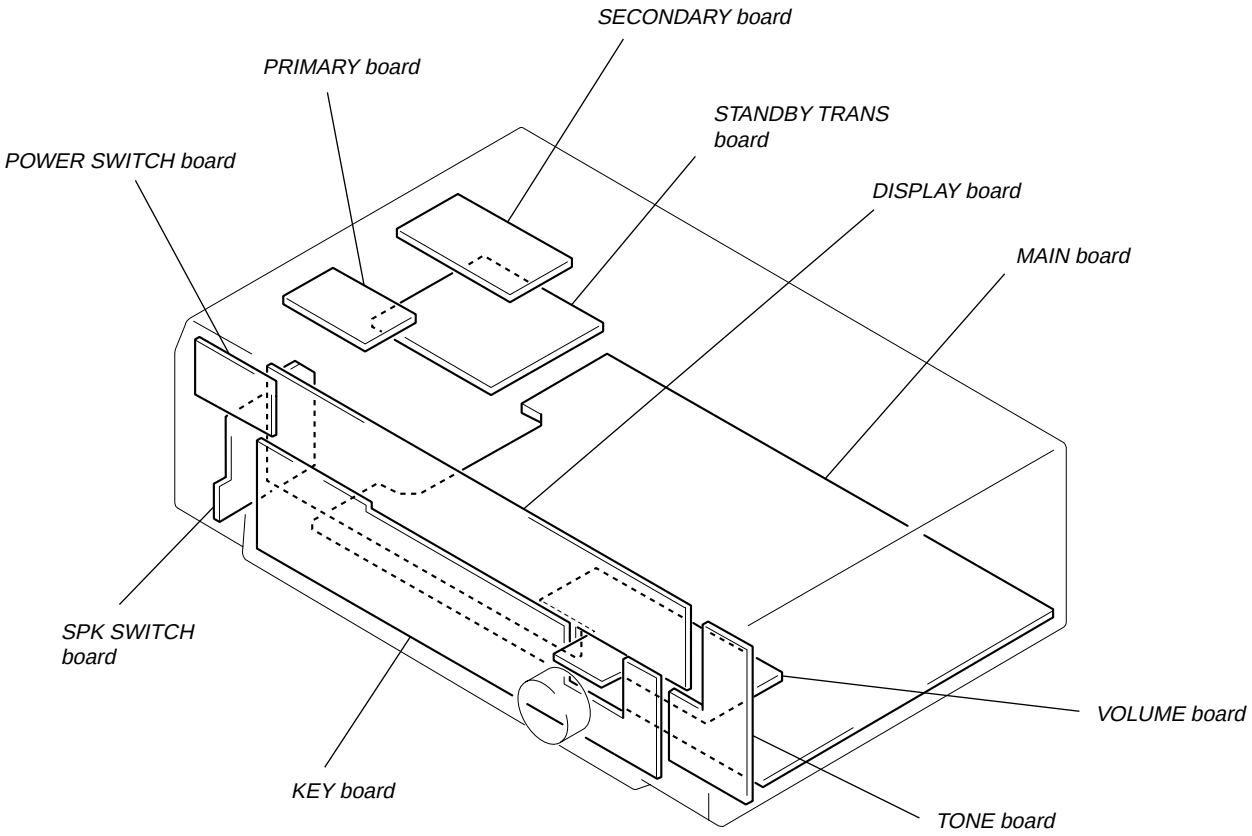
The software version is displayed.

Procedure:

1. While pressing two the buttons of [MD/TAPE] and [DIRECT] simultaneously, press the [I/⏻] button to turn the power ON.
2. The software version is displayed.

SECTION 5
DIAGRAMS

- **Circuit Boards Location**



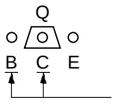
5-1. NOTES FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Board:

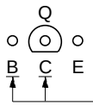
- ⊶—— : parts extracted from the component side.
- ▒▒▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

- Indication of transistor.



These are omitted.



These are omitted.

Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.
- : panel designation.

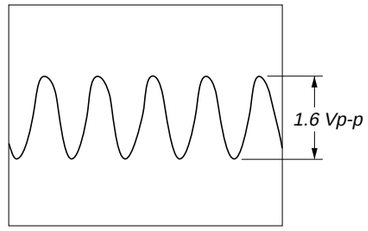
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B+ : B+ Line.
- B− : B− Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM

• Waveforms

– MAIN Board –

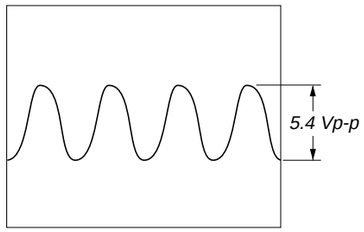
❶ IC1 ⑭ (XO)



4.33 MHz

– DISPLAY Board –

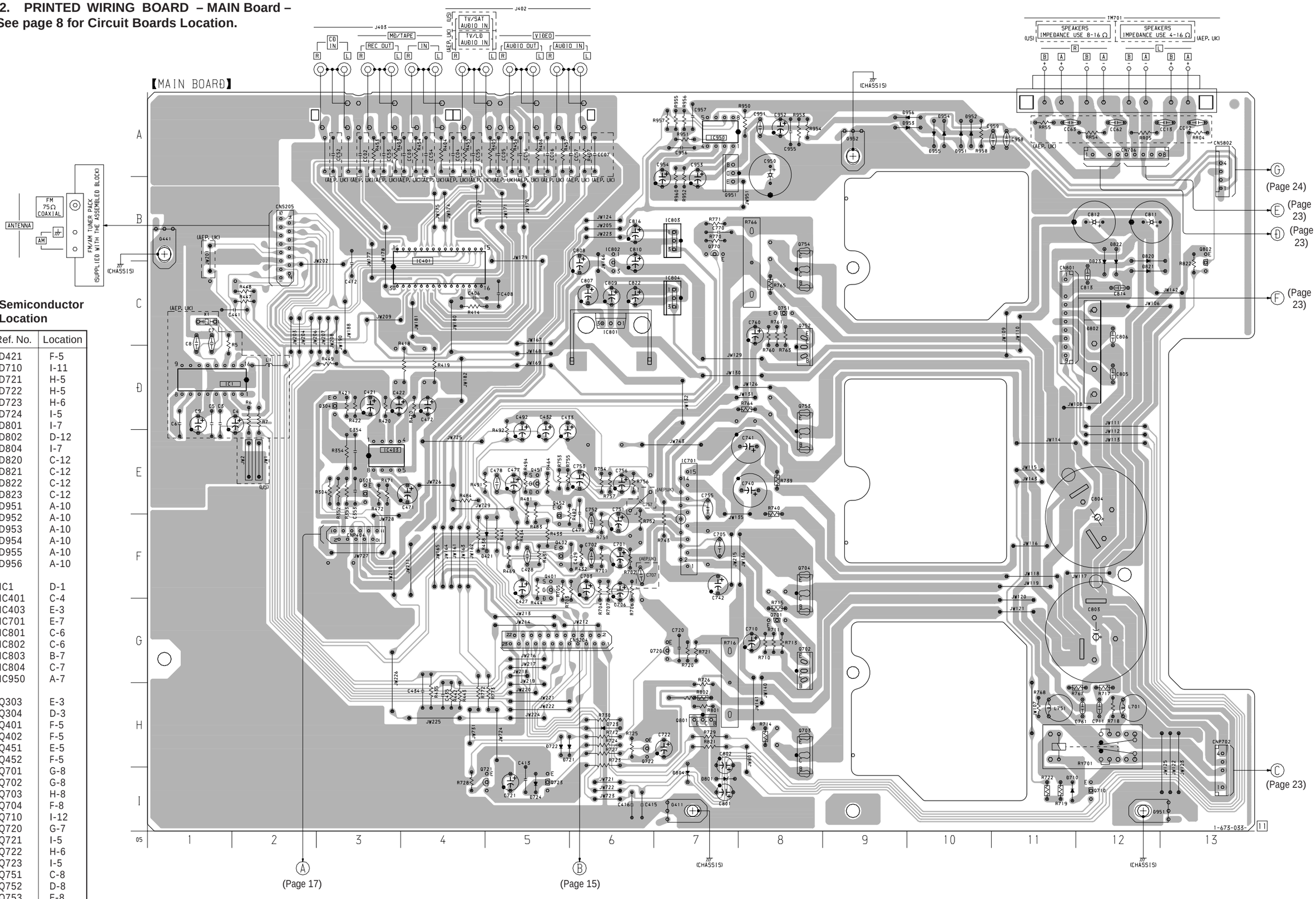
❶ IC201 ㉟ (X2)



4.19 MHz

5-2. PRINTED WIRING BOARD – MAIN Board –

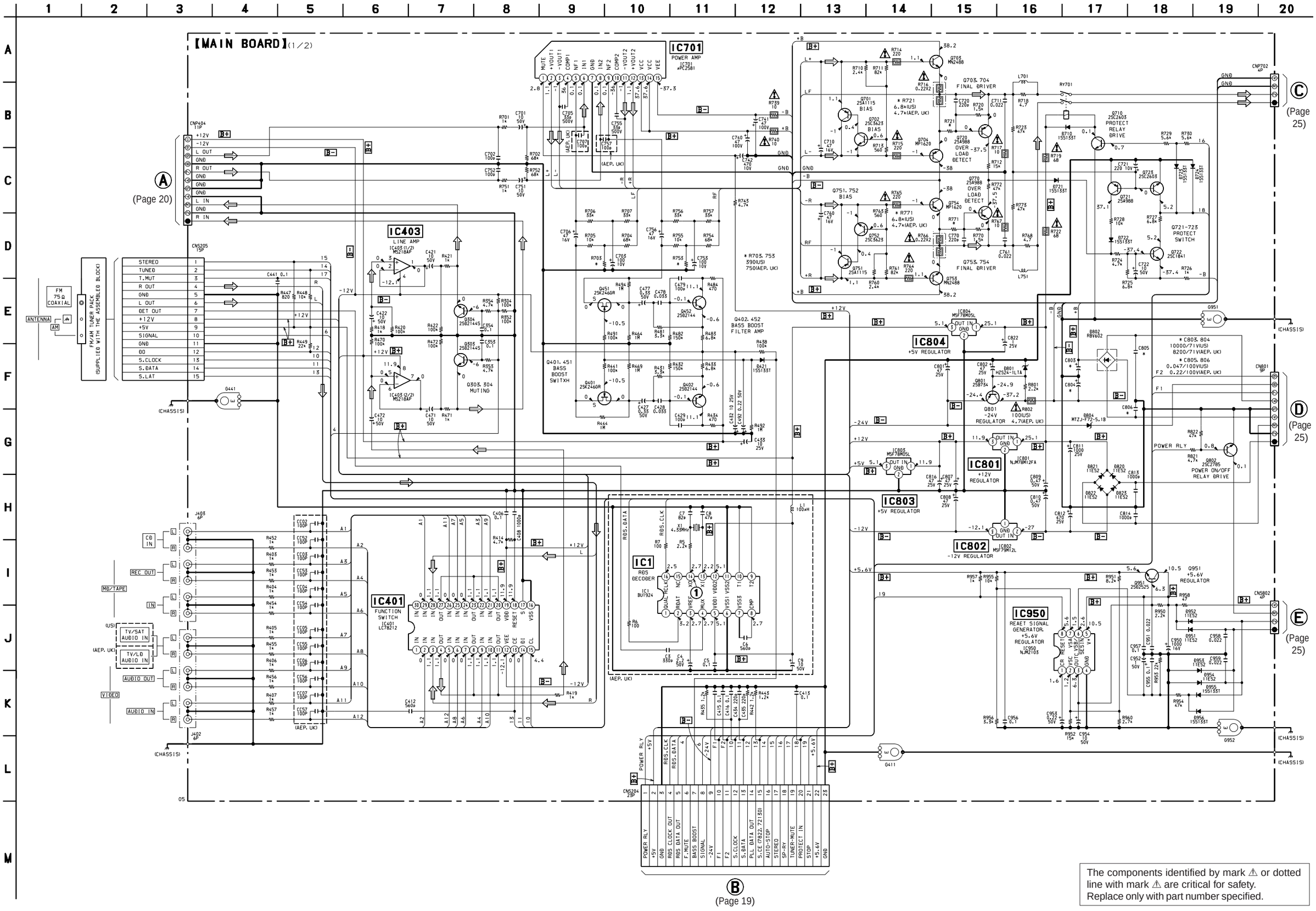
• See page 8 for Circuit Boards Location.



- **Semiconductor Location**

Ref. No.	Location
D421	F-5
D710	I-11
D721	H-5
D722	H-5
D723	H-6
D724	I-5
D801	I-7
D802	D-12
D804	I-7
D820	C-12
D821	C-12
D822	C-12
D823	C-12
D951	A-10
D952	A-10
D953	A-10
D954	A-10
D955	A-10
D956	A-10
IC1	D-1
IC401	C-4
IC403	E-3
IC701	E-7
IC801	C-6
IC802	C-6
IC803	B-7
IC804	C-7
IC950	A-7
Q303	E-3
Q304	D-3
Q401	F-5
Q402	F-5
Q451	E-5
Q452	F-5
Q701	G-8
Q702	G-8
Q703	H-8
Q704	F-8
Q710	I-12
Q720	G-7
Q721	I-5
Q722	H-6
Q723	I-5
Q751	C-8
Q752	D-8
Q753	E-8
Q754	C-8
Q770	B-7
Q801	H-7
Q802	C-13
Q951	A-7

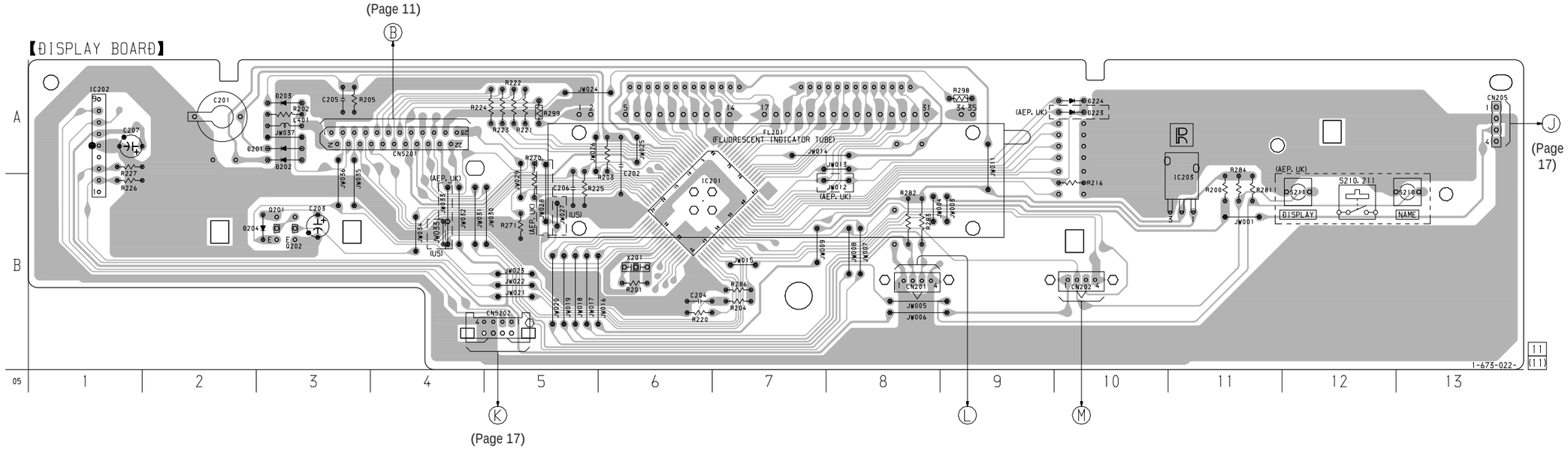
5-3. SCHEMATIC DIAGRAM – MAIN Board (1/2) – • See page 10 for Waveform. • See page 21 for IC Block Diagrams.

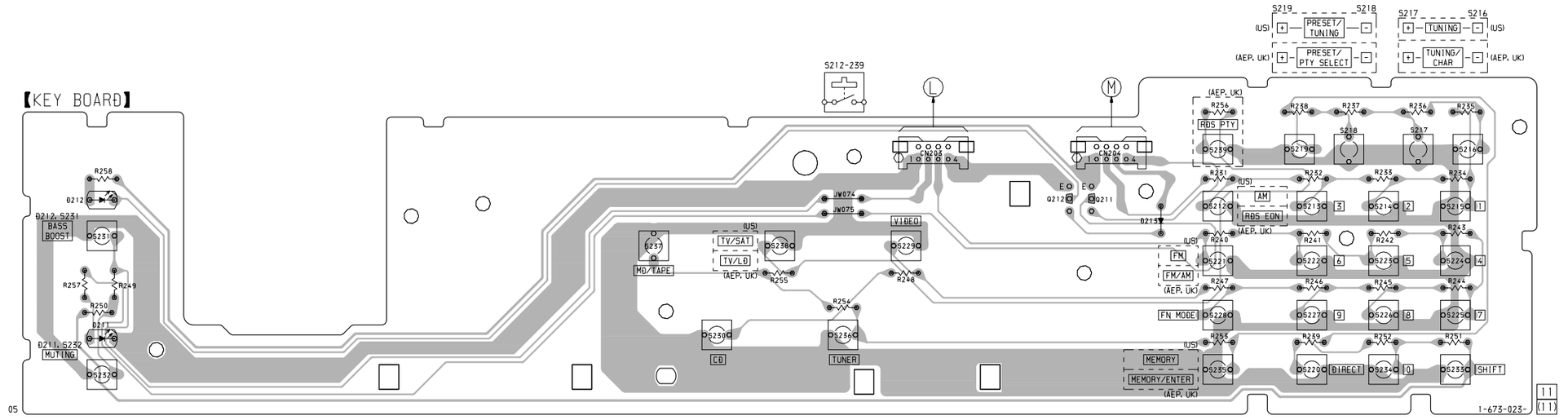


5-4. PRINTED WIRING BOARDS – PANEL Section – • See page 8 for Circuit Boards Location.

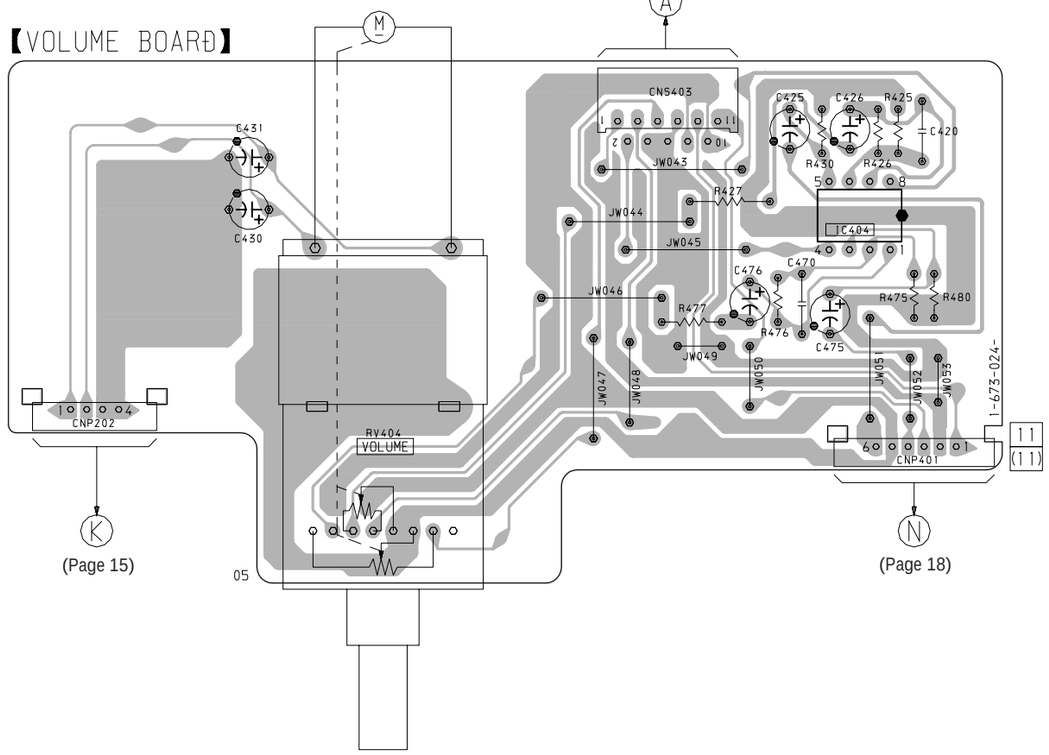
- **Semiconductor Location**

Ref. No.	Location
D201	A-3
D202	A-3
D203	A-3
D204	B-3
D223	A-10
D224	A-10
IC201	B-6
IC202	A-1
IC203	B-11
Q201	B-3
Q202	B-3

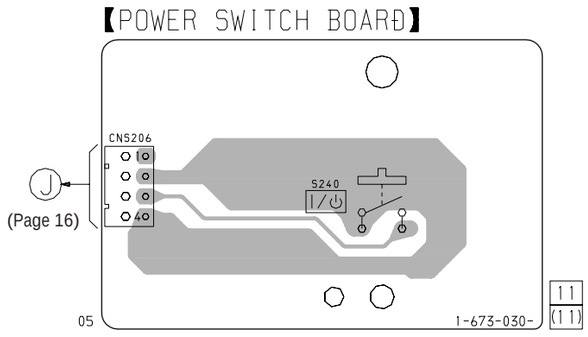




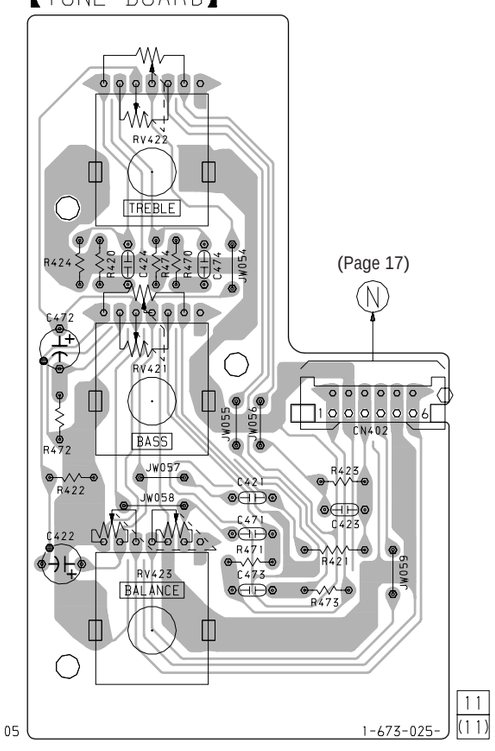
【VOLUME BOARD】



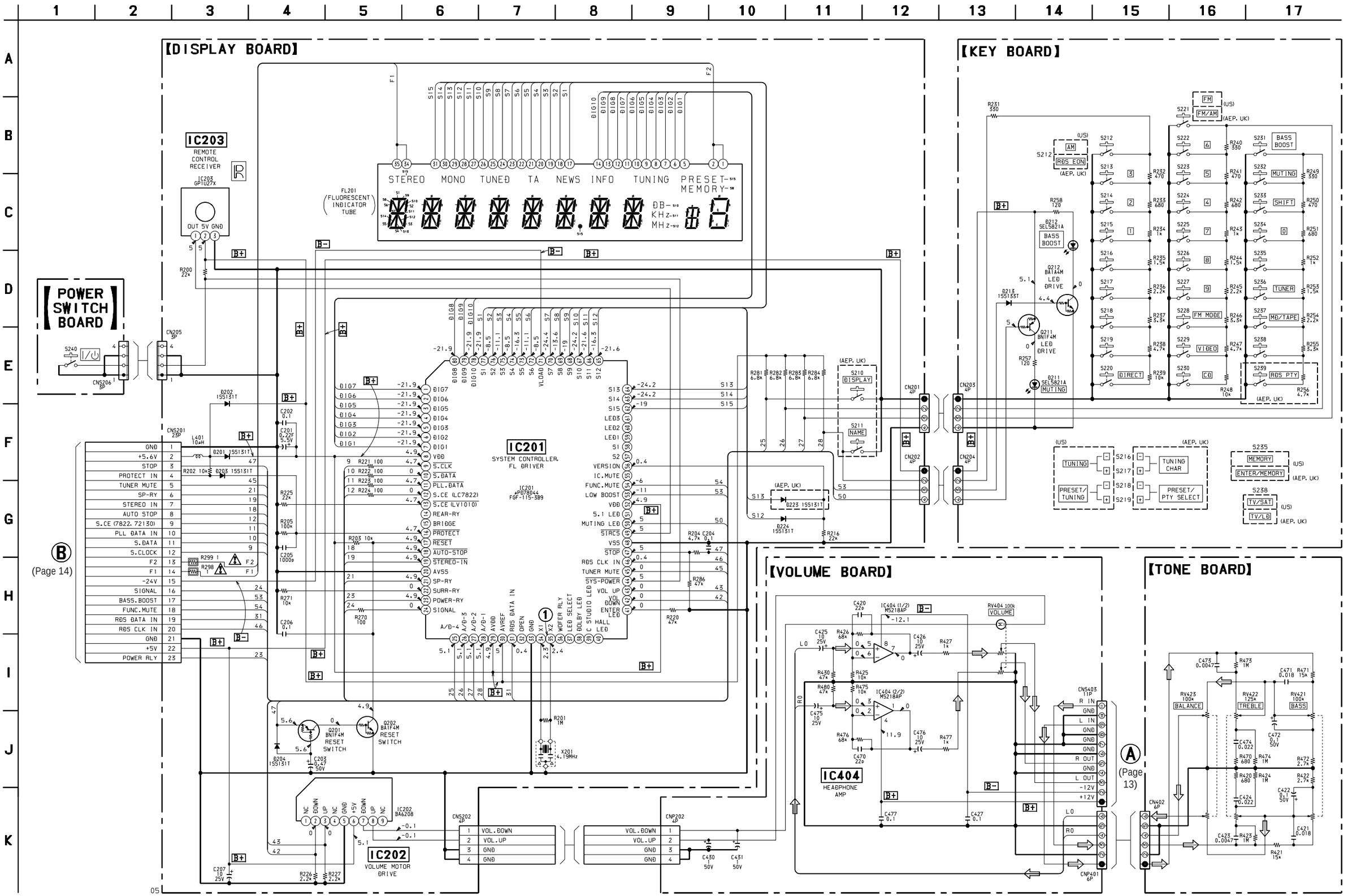
【POWER SWITCH BOARD】



【TONE BOARD】



5-5. SCHEMATIC DIAGRAM – PANEL Section – • See page 10 for Waveform. • See page 22 for IC Block Diagram.

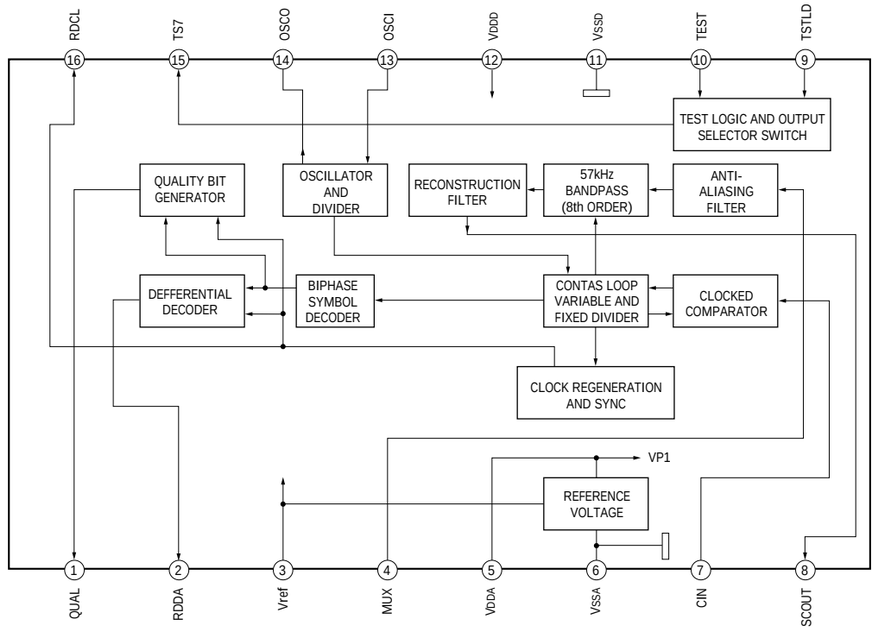


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

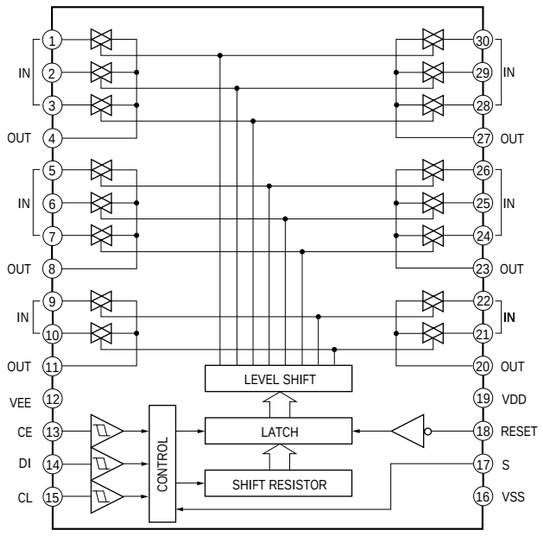
• **IC Block Diagrams**

– MAIN Board –

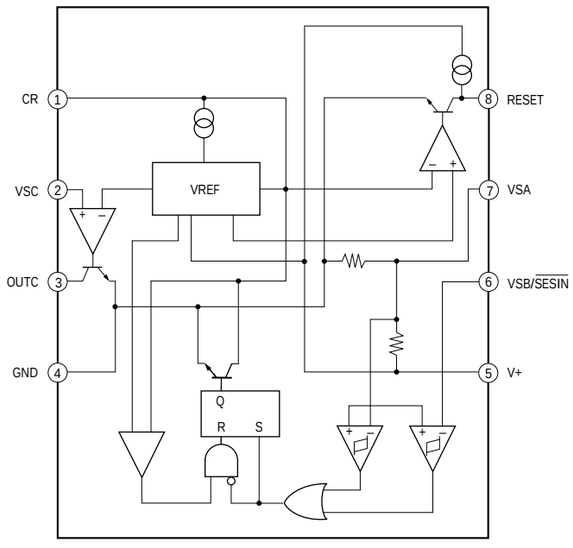
IC1 BU1922 (AEP, UK models)



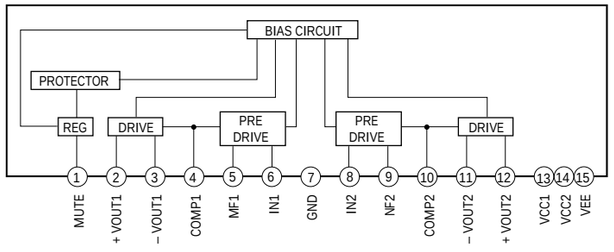
IC401 LC78212



IC950 NJM2103D

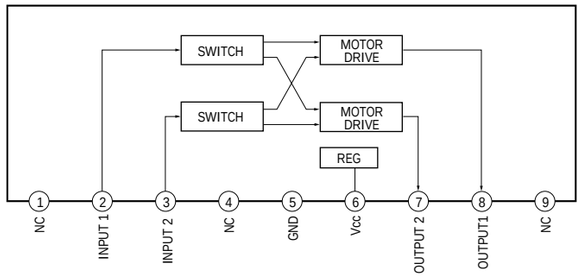


IC701 µPC2581V



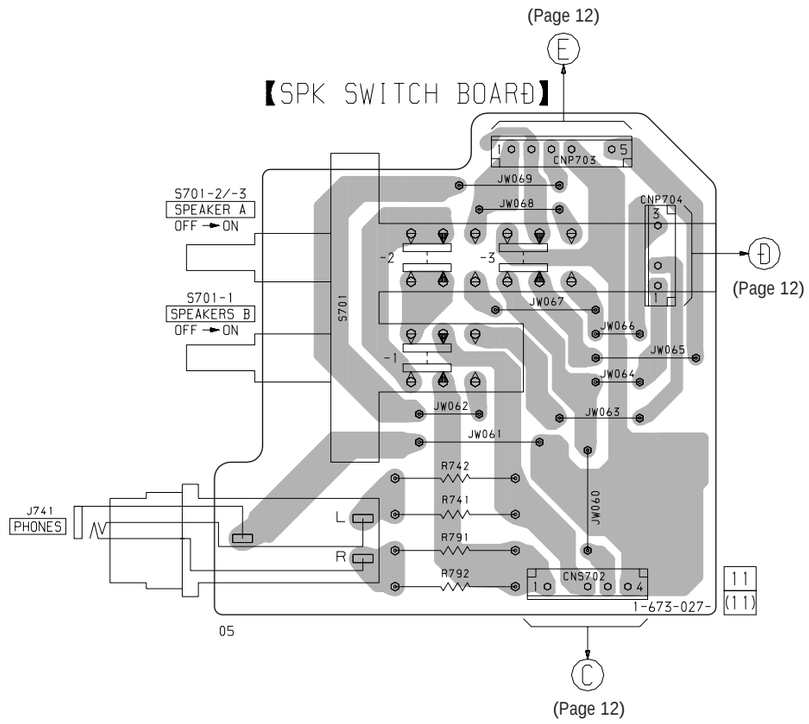
– DISPLAY Board –

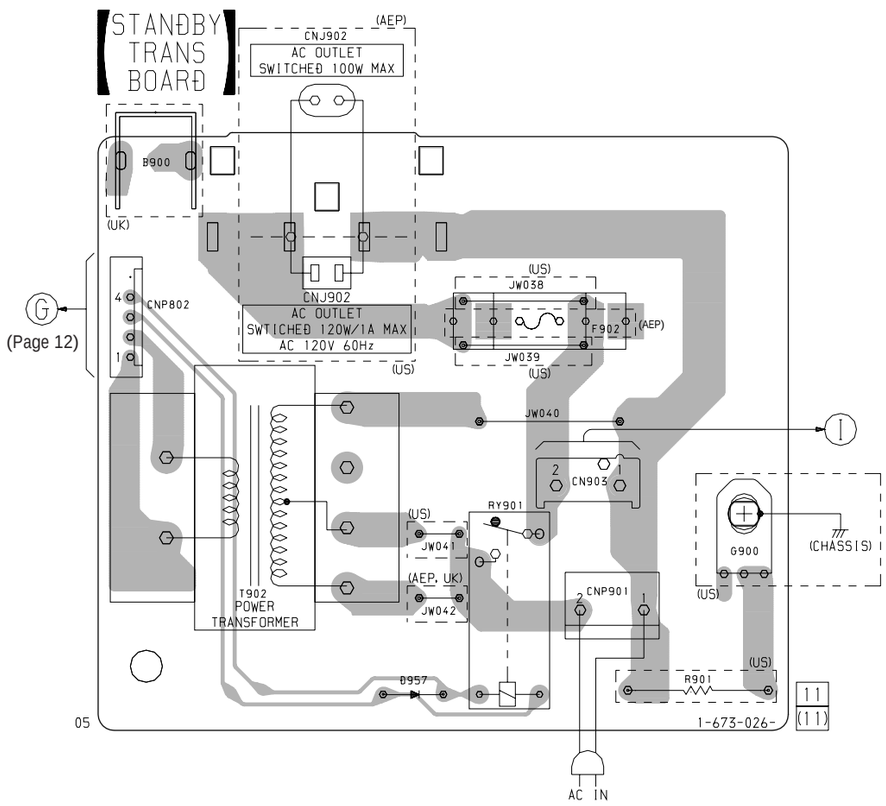
IC202 BA6208

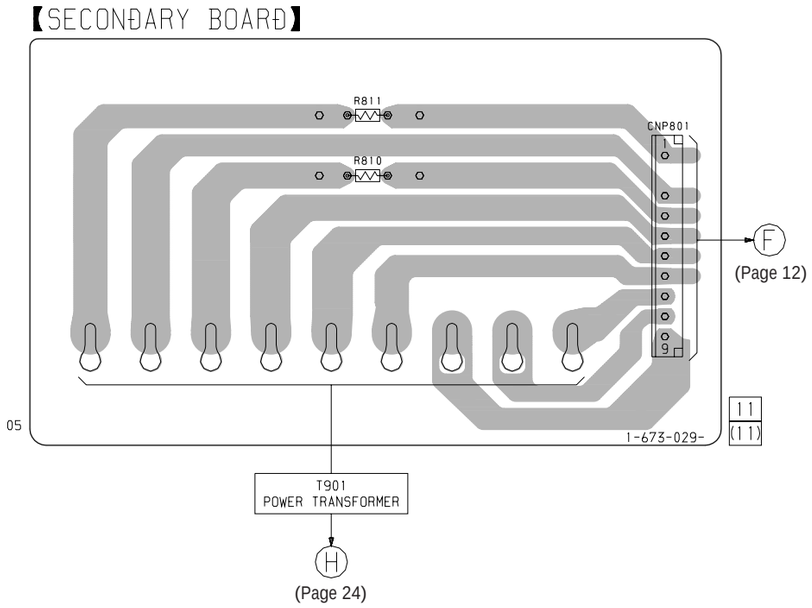


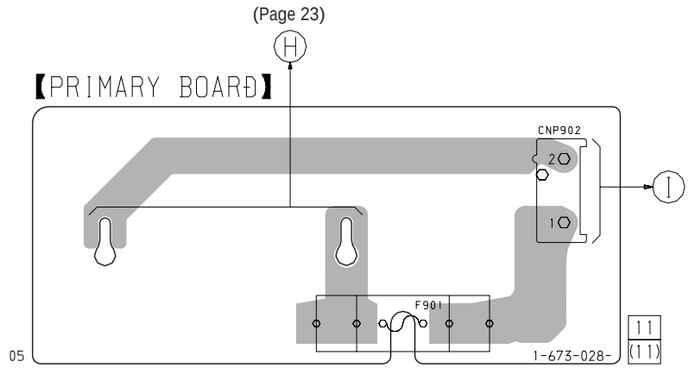
5-6. PRINTED WIRING BOARDS – SPK SWITCH Board/SECONDARY Board/PRIMARY Board/STANDBY TRANS Board –

• See page 8 for Circuit Boards Location.

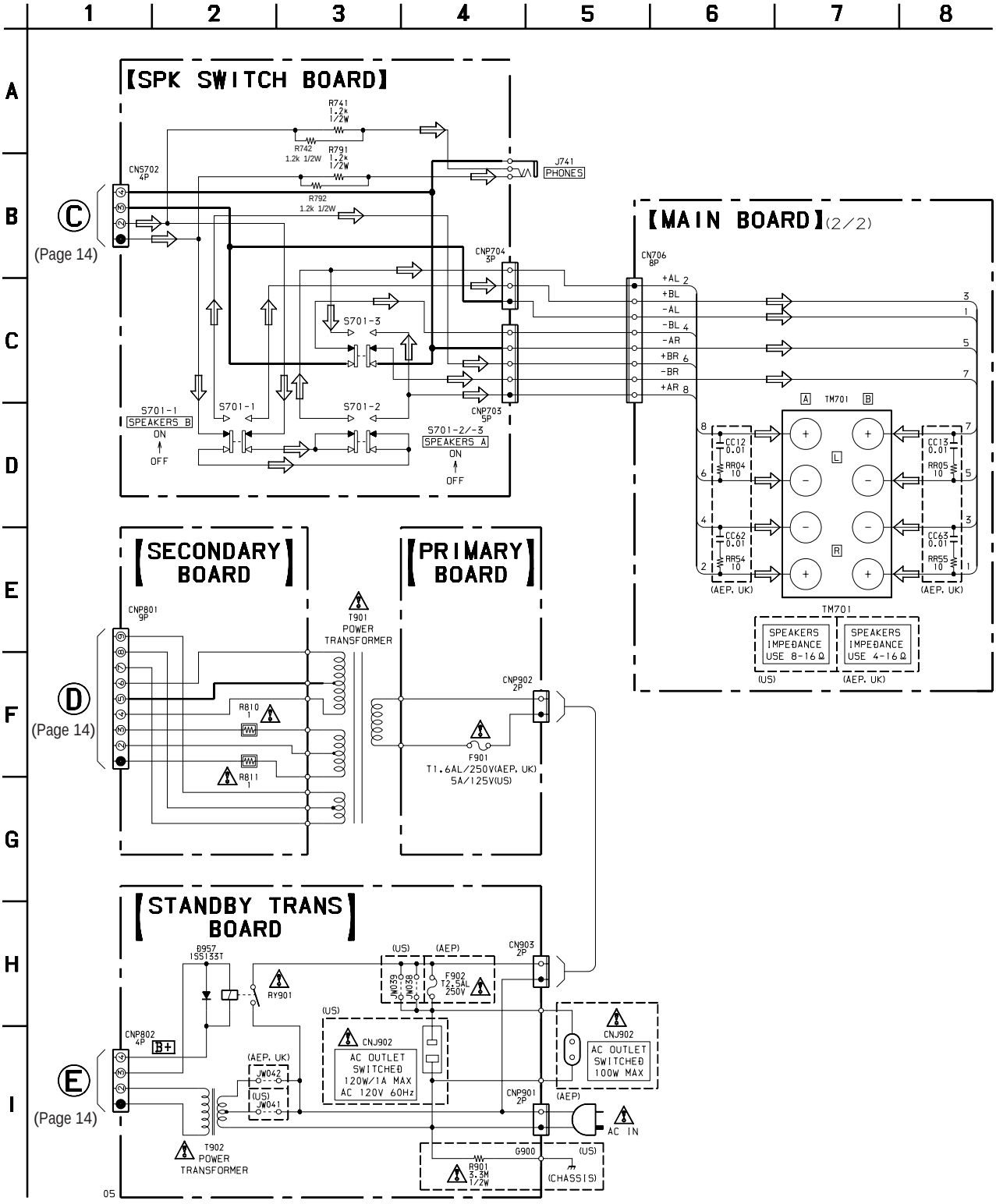








5-7. SCHEMATIC DIAGRAM – MAIN Board (2/2)/SPK SWITCH Board/SECONDARY Board/ PRIMARY Board/STANDBY TRANS Board –



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-8. IC PIN FUNCTION DESCRIPTION

• **DISPLAY BOARD IC201 μPD78044FGF-115-3B9 (SYSTEM CONTROLLER, FL DRIVER)**

Pin No.	Pin Name	I/O	Description
1 to 7	DIG7 to DIG1	O	Digit drive signal output to the fluorescent indicator tube (FL201)
8	VDD	—	Power supply terminal (+5V)
9	$\overline{\text{S.CLK}}$	O	Serial data transfer clock signal output to the LC78212 (IC401), PLL IC on FM/AM tuner pack "L" active
10	$\overline{\text{S.DATA}}$	O	Serial data output to the LC78212 (IC401), PLL IC on FM/AM tuner pack "L" active
11	$\overline{\text{PLL.DATA}}$	I	Serial data input from the PLL IC on FM/AM tuner pack "L" active
12	S.CE (LC7822)	O	Serial chip enable signal output to the LC78212 (IC401), PLL IC on FM/AM tuner pack "H" active
13	$\overline{\text{S.CE (LV1010)}}$	O	Serial chip enable signal output terminal "L" active Not used (pull down)
14	REAR-RY	O	Relay drive signal output for the rear side speaker "H": relay on Not used (open)
15	BRIDGE	O	Bridgeable relay drive signal output terminal "H": relay on Not used (open)
16	$\overline{\text{PROTECT}}$	I	Over load detect signal input from the protect circuit "L": protect detect
17	$\overline{\text{RESET}}$	I	System reset signal input from the reset signal generator (IC950, Q201) "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
18	$\overline{\text{AUTO-STOP}}$	I	Tuned display detection signal input from the FM/AM tuner pack "L": tuned
19	$\overline{\text{STEREO-IN}}$	I	Stereo detection signal input from the FM/AM tuner pack "L": stereo
20	AVSS	—	Ground terminal (for A/D converter analog system)
21	SP-RY	O	Relay drive signal output for the speaker protect "H": relay on
22	SURR-RY	O	Relay drive signal output for the surround speaker "H": relay on Not used (pull down)
23	POWER-RY	O	Relay drive signal output for the power on/off control "H": relay on
24	SIGNAL	I	FM and AM signal meter voltage detection signal input from the FM/AM tuner pack
25	A/D-4	I	Key input terminal (A/D input) S210 (NAME) key input (Used for the AEP and UK models only)
26	A/D-3	I	Key input terminal (A/D input) S231 to S239 (BASS BOOST, MUTING, SHIFT, 0, MEMORY or MEMORY/ENTER, CD, MD/TAPE, TV/SAT or TV/LD, RDS PTY) keys input (S239 RDS PTY key: used for the AEP and UK models only)
27	A/D-2	I	Key input terminal (A/D input) S221 to S230 (FM or FM/AM, 6, 5, 4, 7, 8, 9, FM MODE, VIDEO, TUNER) keys input
28	A/D-1	I	Key input terminal (A/D input) S211 to S220 (DISPLAY, AM or RDS EON, 3, 2, 1, TUNING or TUNING/CHAR –/+, PRESET TUNING or PRESET/PTY SELECT –/+, DIRECT) keys input (S211 DISPLAY key: used for the AEP and UK models only)
29	AVDD	—	Power supply terminal (+5V) (for A/D converter analog system)
30	AVREF	I	Reference voltage (+5V) input terminal (for A/D converter)
31	RDS DATA IN	I	RDS data input from the RDS decoder (IC1) (Used for the AEP and UK models only)
32	OPEN	—	Not used (open)
33	GND	—	Ground terminal
34	X1	I	Main system clock input terminal (4.19 MHz)
35	X2	O	Main system clock output terminal (4.19 MHz)
36	WOFER RLY	O	Relay drive signal output for the woofer speaker "H": relay on Not used (open)
37	LED SELECT	O	LED select signal output terminal "H" active Not used (open)
38	DOLBY LED	O	LED drive signal output terminal "H": LED on Not used (open)
39	C STUDIO LED	O	LED drive signal output terminal "H": LED on Not used (open)
40	HALL LED	O	LED drive signal output terminal "H": LED on Not used (open)
41	ENTER LED	I	Not used (fixed at "L")
42	VOL DOWN	O	Motor drive signal (volume down direction) output to the volume motor drive (IC202) "H" active
43	VOL UP	O	Motor drive signal (volume up direction) output to the volume motor drive (IC202) "H" active

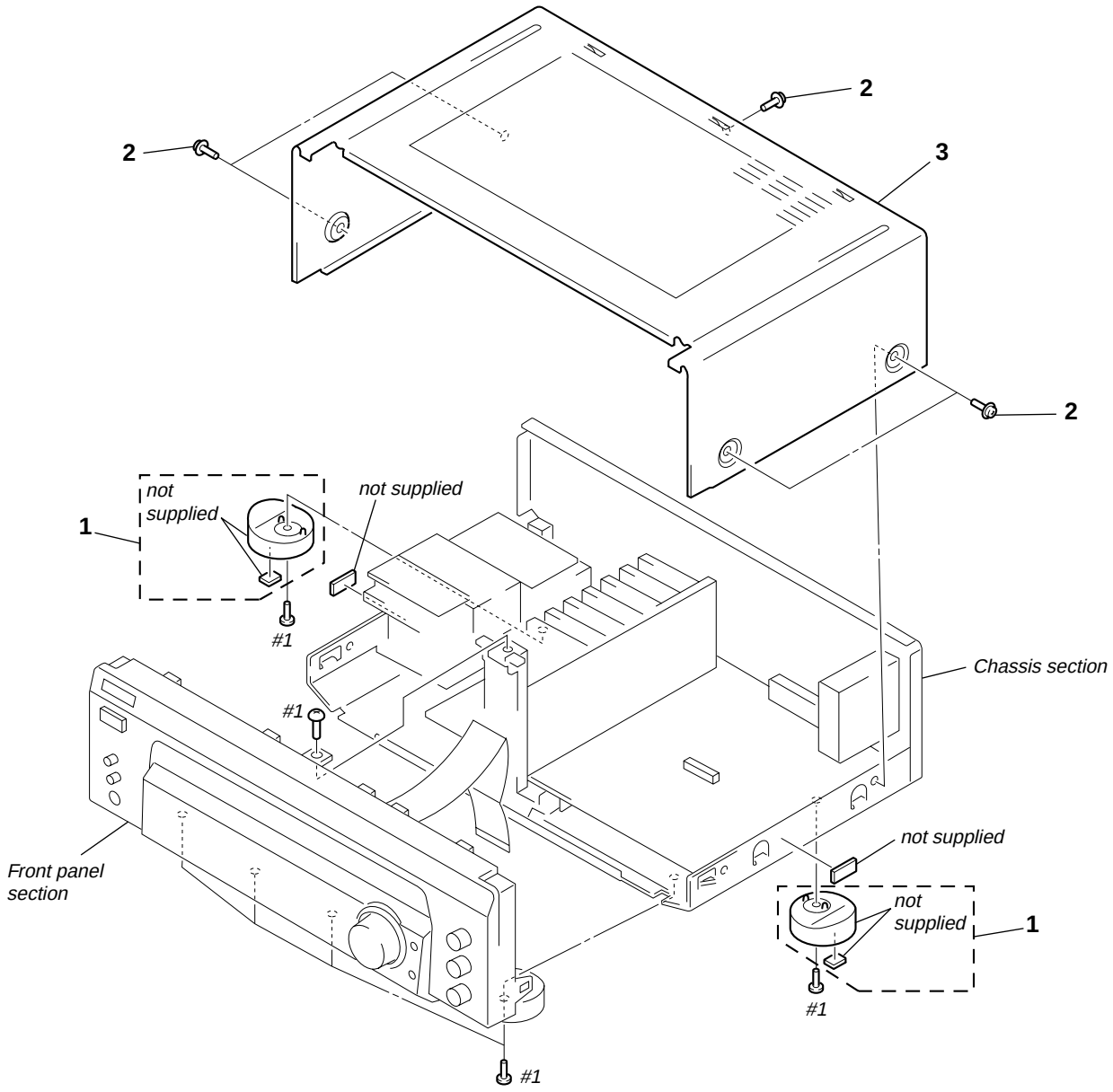
Pin No.	Pin Name	I/O	Description
44	$\overline{\text{SYS-POWER}}$	I	Power on/off switch (S240 I/⏻) input terminal "L" is input when key pressing
45	TUNER MUTE	O	Muting control signal output to the FM/AM tuner pack "H": muting on
46	RDS CLK IN	I	RDS serial clock signal input from the RDS decoder (IC1) (Used for the AEP and UK models only)
47	$\overline{\text{STOP}}$	I	Power down detection signal input from the reset signal generator (IC950) "L": power down, normally: "H"
48	VSS	—	Ground terminal
49	$\overline{\text{SIRCS}}$	I	Sircs remote control signal input from the remote control receiver (IC203)
50	MUTING LED	O	LED drive signal output of the MUTING indicator (D211) "L": LED on
51	5.1 LED	O	LED drive signal output terminal "L": LED on Not used (open)
52	VDD	—	Power supply terminal (+5V)
53	LOW BOOST	O	Control signal output of the BASS BOOST circuit and LED drive signal output of the BASS BOOST indicator (D212) "H": BASS BOOST on (LED on)
54	FUNC. MUTE	O	Audio line muting on/off control signal output terminal "H": muting on
55	IC. MUTE	O	Muting on/off control signal output terminal "H": muting on Not used (open)
56	VERSION	I	Setting terminal for the version
57, 58	S2, S1	O	Not used (open)
59 to 61	LED1 to LED3	O	LED drive signal output terminal "H": LED on Not used (open)
62 to 70	S15 to S7	O	Segment drive signal output to the fluorescent indicator tube (FL201)
71	VLOAD	—	Negative power supply terminal for the fluorescent indicator tube drive (–24V)
72 to 77	S6 to S1	O	Segment drive signal output to the fluorescent indicator tube (FL201)
78 to 80	DIG10 to DIG8	O	Digit drive signal output to the fluorescent indicator tube (FL201)

SECTION 6
EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

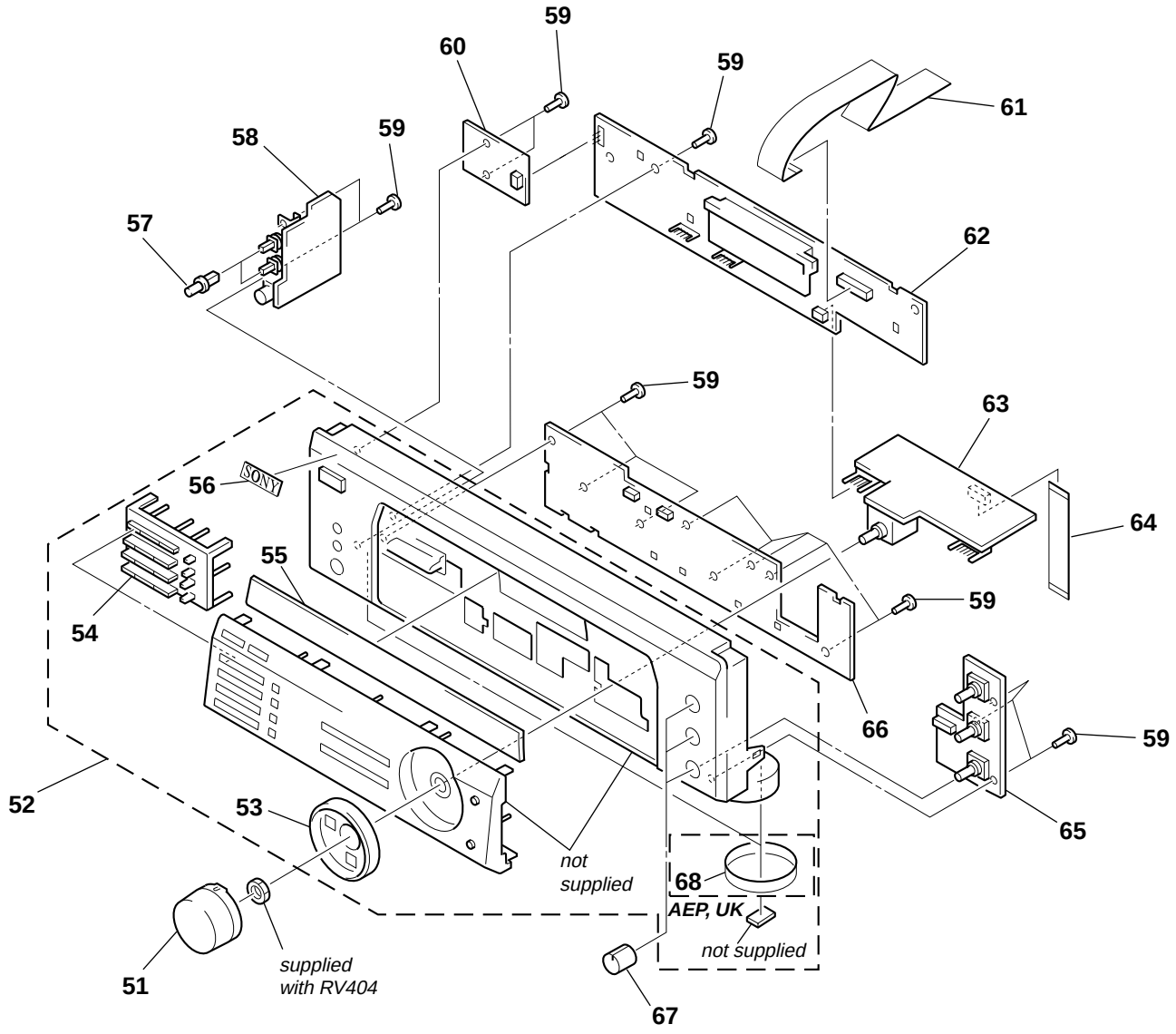
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

(1) CASE SECTION



Ref. No.	Part No.	Description	Remark
1	X-4947-207-1	FOOT ASSY (F50150S) (AEP, UK)	
1	X-4947-208-1	FOOT ASSY (F50150S) (US)	
2	3-710-901-11	SCREW, TAPPING	
* 3	4-998-206-21	CASE (413226)	

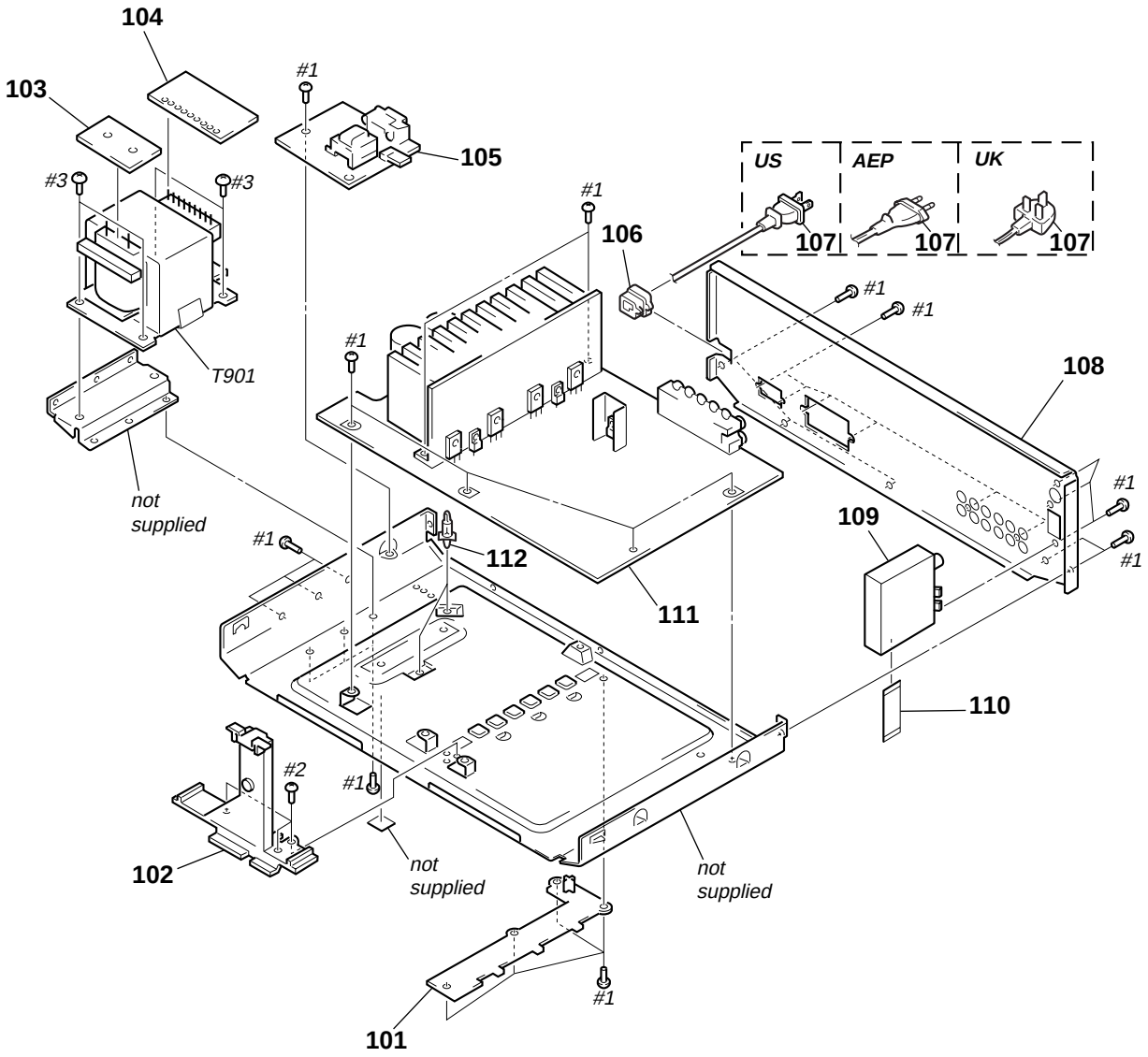
(2) FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	X-4951-035-1	KNOB (VOL) ASSY	
52	X-4951-038-1	FRONT PANEL ASSY (US)	
52	X-4951-078-1	FRONT PANEL ASSY (AEP, UK)	
53	4-216-792-01	RING (VOL)	
54	4-216-779-01	BUTTON (KEY)	
55	4-216-794-11	PLATE INDICATION (US)	
55	4-216-794-21	PLATE INDICATION (AEP, UK)	
56	4-996-698-01	EMBLEM, SONY	
57	4-951-801-01	BUTTON (S)	
58	1-673-027-11	SPK SWITCH BOARD	
59	4-951-620-01	SCREW (2.6X8), +BVTP	

Ref. No.	Part No.	Description	Remark
60	1-673-030-11	POWER SWITCH BOARD	
61	1-782-084-11	WIRE (FLAT TYPE) (23 CORE)	
62	A-4417-997-A	DISPLAY BOARD, COMPLETE (US)	
62	A-4419-176-A	DISPLAY BOARD, COMPLETE (AEP, UK)	
63	1-673-024-11	VOLUME BOARD	
64	1-769-941-11	WIRE (FLAT TYPE) (11 CORE)	
65	1-673-025-11	TONE BOARD	
66	A-4419-001-A	KEY BOARD, COMPLETE (US)	
66	A-4419-178-A	KEY BOARD, COMPLETE (AEP, UK)	
67	4-998-717-01	KNOB (BAL)	
68	4-977-593-11	RING (DIA. 50), ORNAMENTAL	

(3) CHASSIS SECTION



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
101	4-217-872-11	BOTTOM COVER	
102	4-216-798-11	SUB (MOLD)	
103	1-673-028-11	PRIMARY BOARD	
104	1-673-029-11	SECONDARY BOARD	
105	1-673-026-11	STANDBY TRANS BOARD	
* 106	3-703-244-00	BUSHING (2104), CORD	
⚠107	1-777-071-21	CORD, POWER (AEP)	
⚠107	1-783-820-11	CORD, POWER (US)	
⚠107	1-790-226-11	CORD, POWER (UK)	
108	4-216-802-01	BACK PANEL (E20) (US)	
108	4-216-802-11	BACK PANEL (E20) (AEP)	
108	4-216-802-21	BACK PANEL (E20) (UK)	
109	1-493-407-51	TUNER PACK (AEP, UK)	
109	1-693-408-61	TUNER PACK (US)	
110	1-773-001-11	WIRE (FLAT TYPE) (15 CORE)	
111	A-4419-005-A	MAIN BOARD, COMPLETE (US)	
111	A-4419-179-A	MAIN BOARD, COMPLETE (AEP, UK)	
112	4-924-098-01	HOLDER, PC BOARD	
⚠T901	1-433-712-11	TRANSFORMER, POWER (AEP, UK)	
⚠T901	1-433-720-11	TRANSFORMER, POWER (US)	

SECTION 7
ELECTRICAL PARTS LIST

DISPLAY

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-4417-997-A	DISPLAY BOARD, COMPLETE (US)			
	A-4419-176-A	DISPLAY BOARD, COMPLETE (AEP, UK)			
		**********			
*	4-921-941-01	CUSHION (FL)			
*	4-943-107-11	HOLDER (FL TUBE)			
		< CAPACITOR >			
C201	1-104-905-11	CAPACITOR	0.22F		5.5V
C202	1-164-159-11	CERAMIC	0.1uF		50V
C203	1-124-465-00	ELECT	0.47uF	20%	50V
C204	1-164-159-11	CERAMIC	0.1uF		50V
C205	1-162-294-31	CERAMIC	0.001uF	10%	50V
C206	1-164-159-11	CERAMIC	0.1uF		50V
C207	1-126-096-11	ELECT	10uF	20%	35V
		< CONNECTOR >			
CN201	1-779-366-11	CONNECTOR, BOARD TO BOARD 4P			
CN202	1-779-366-11	CONNECTOR, BOARD TO BOARD 4P			
CN205	1-770-397-11	HOUSING, CONNECTOR (PC BOARD) 4P			
		< DIODE >			
D201	8-719-911-19	DIODE 1SS119			
D202	8-719-911-19	DIODE 1SS119			
D203	8-719-911-19	DIODE 1SS119			
D204	8-719-911-19	DIODE 1SS119			
D223	8-719-911-19	DIODE 1SS119 (AEP, UK)			
D224	8-719-911-19	DIODE 1SS119-25			
		< FLOURESCENT INDICATOR TUBE >			
FL201	1-517-662-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC201	8-759-542-29	IC uPD78044FGF-115-3B9			
IC202	8-759-962-08	IC BA6208			
IC203	8-759-332-18	IC GP1U27XB (REMOTE CONTROL RECEIVER)			
		< COIL >			
L401	1-410-509-11	INDUCTOR	10uH		

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q201	8-729-900-63	TRANSISTOR DTA124ES			
Q202	8-729-900-36	TRANSISTOR DTC124ES			
		< RESISTOR >			
R200	1-249-433-11	CARBON	22K	5%	1/4W
R201	1-247-903-00	CARBON	1M	5%	1/4W
R202	1-249-429-11	CARBON	10K	5%	1/4W
R203	1-249-429-11	CARBON	10K	5%	1/4W
R204	1-249-425-11	CARBON	4.7K	5%	1/4W
R205	1-249-441-11	CARBON	100K	5%	1/4W
R216	1-249-433-11	CARBON	22K	5%	1/4W
R220	1-249-437-11	CARBON	47K	5%	1/4W
R221	1-247-807-31	CARBON	100	5%	1/4W
R222	1-247-807-31	CARBON	100	5%	1/4W
R223	1-247-807-31	CARBON	100	5%	1/4W
R224	1-247-807-31	CARBON	100	5%	1/4W
R225	1-249-433-11	CARBON	22K	5%	1/4W
R226	1-249-421-11	CARBON	2.2K	5%	1/4W
R227	1-249-421-11	CARBON	2.2K	5%	1/4W
R270	1-247-807-31	CARBON	100	5%	1/4W
R271	1-249-429-11	CARBON	10K	5%	1/4W
R281	1-249-427-11	CARBON	6.8K	5%	1/4W
R282	1-249-427-11	CARBON	6.8K	5%	1/4W
R283	1-249-427-11	CARBON	6.8K	5%	1/4W
R284	1-249-427-11	CARBON	6.8K	5%	1/4W
R286	1-249-437-11	CARBON	47K	5%	1/4W
⚠R298	1-249-381-11	CARBON	1	5%	1/4W F
⚠R299	1-249-381-11	CARBON	1	5%	1/4W F
		< SWITCH >			
S210	1-762-751-11	SWITCH, TACTILE (DISPLAY) (AEP, UK)			
S211	1-762-751-11	SWITCH, TACTILE (NAME) (AEP, UK)			
		< VIBRATOR >			
X201	1-577-101-11	VIBRATOR, CERAMIC (4.19MHz)			
		**********			

KEY

Ref. No.	Part No.	Description			Remark
	A-4419-001-A	KEY BOARD, COMPLETE (US)			
	A-4419-178-A	KEY BOARD, COMPLETE (AEP, UK)			
		**********			
		< CONNECTOR >			
CN204	1-770-397-11	HOUSING, CONNECTOR (PC BOARD) 4P			
CNS201	1-568-742-11	SOCKET, CONNECTOR 23P			
		< DIODE >			
D211	8-719-046-39	LED SEL5821A-TH15 (MUTING)			
D212	8-719-046-39	LED SEL5821A-TH15 (BASS BOOST)			
D213	8-719-911-19	DIODE 1SS119-25			
		< TRANSISTOR >			
Q211	8-729-900-63	TRANSISTOR DTA124ES			
Q212	8-729-900-36	TRANSISTOR DTC124ES			
		< RESISTOR >			
R231	1-249-411-11	CARBON	330	5%	1/4W
R232	1-249-413-11	CARBON	470	5%	1/4W
R233	1-249-415-11	CARBON	680	5%	1/4W
R234	1-249-417-11	CARBON	1K	5%	1/4W
R235	1-249-419-11	CARBON	1.5K	5%	1/4W
R236	1-249-421-11	CARBON	2.2K	5%	1/4W
R237	1-247-843-11	CARBON	3.3K	5%	1/4W
R238	1-249-425-11	CARBON	4.7K	5%	1/4W
R239	1-249-429-11	CARBON	10K	5%	1/4W
R240	1-249-411-11	CARBON	330	5%	1/4W
R241	1-249-413-11	CARBON	470	5%	1/4W
R242	1-249-415-11	CARBON	680	5%	1/4W
R243	1-249-417-11	CARBON	1K	5%	1/4W
R244	1-249-419-11	CARBON	1.5K	5%	1/4W
R245	1-249-421-11	CARBON	2.2K	5%	1/4W
R246	1-247-843-11	CARBON	3.3K	5%	1/4W
R247	1-249-425-11	CARBON	4.7K	5%	1/4W
R248	1-249-429-11	CARBON	10K	5%	1/4W
R249	1-249-411-11	CARBON	330	5%	1/4W
R250	1-249-413-11	CARBON	470	5%	1/4W
R251	1-249-415-11	CARBON	680	5%	1/4W
R252	1-249-417-11	CARBON	1K	5%	1/4W
R253	1-249-419-11	CARBON	1.5K	5%	1/4W
R254	1-249-421-11	CARBON	2.2K	5%	1/4W
R255	1-247-843-11	CARBON	3.3K	5%	1/4W
R256	1-249-425-11	CARBON	4.7K	5%	1/4W (AEP, UK)
R257	1-249-406-11	CARBON	120	5%	1/4W
R258	1-249-406-11	CARBON	120	5%	1/4W
		< SWITCH >			
S212	1-762-751-11	SWITCH, TACTILE (RDS EON) (AEP, UK)			
S212	1-762-875-21	SWITCH, KEYBOARD (AM) (US)			
S213	1-762-751-11	SWITCH, TACTILE (3) (AEP, UK)			
S213	1-762-875-21	SWITCH, KEYBOARD (3) (US)			
S214	1-762-751-11	SWITCH, TACTILE (2) (AEP, UK)			
S214	1-762-875-21	SWITCH, KEYBOARD (2) (US)			
S215	1-762-751-11	SWITCH, TACTILE (1) (AEP, UK)			
S215	1-762-875-21	SWITCH, KEYBOARD (1) (US)			
S216	1-762-751-11	SWITCH, TACTILE (TUNING/CHAR –) (AEP, UK)			
S216	1-762-875-21	SWITCH, KEYBOARD (TUNING –) (US)			
S217	1-762-751-11	SWITCH, TACTILE (TUNING/CHAR +) (AEP, UK)			
S217	1-762-875-21	SWITCH, KEYBOARD (TUNING +) (US)			
S218	1-762-751-11	SWITCH, TACTILE (PRESET/PTY SELECT –) (AEP, UK)			
S218	1-762-875-21	SWITCH, KEYBOARD (PRESET/TUNING –) (US)			
S219	1-762-751-11	SWITCH, TACTILE (PRESET/PTY SELECT +) (AEP, UK)			
S219	1-762-875-21	SWITCH, KEYBOARD (PRESET/TUNING +) (US)			
S220	1-762-751-11	SWITCH, TACTILE (DIRECT) (AEP, UK)			
S220	1-762-875-21	SWITCH, KEYBOARD (DIRECT) (US)			
S221	1-762-751-11	SWITCH, TACTILE (FM/AM) (AEP, UK)			
S221	1-762-875-21	SWITCH, KEYBOARD (FM) (US)			
S222	1-762-751-11	SWITCH, TACTILE (6) (AEP, UK)			
S222	1-762-875-21	SWITCH, KEYBOARD (6) (US)			
S223	1-762-751-11	SWITCH, TACTILE (5) (AEP, UK)			
S223	1-762-875-21	SWITCH, KEYBOARD (5) (US)			
S224	1-762-751-11	SWITCH, TACTILE (4) (AEP, UK)			
S224	1-762-875-21	SWITCH, KEYBOARD (4) (US)			
S225	1-762-751-11	SWITCH, TACTILE (7) (AEP, UK)			
S225	1-762-875-21	SWITCH, KEYBOARD (7) (US)			
S226	1-762-751-11	SWITCH, TACTILE (8) (AEP, UK)			
S226	1-762-875-21	SWITCH, KEYBOARD (8) (US)			
S227	1-762-751-11	SWITCH, TACTILE (9) (AEP, UK)			
S227	1-762-875-21	SWITCH, KEYBOARD (9) (US)			
S228	1-762-751-11	SWITCH, TACTILE (FM MODE) (AEP, UK)			
S228	1-762-875-21	SWITCH, KEYBOARD (FM MODE) (US)			
S229	1-762-751-11	SWITCH, TACTILE (VIDEO) (AEP, UK)			
S229	1-762-875-21	SWITCH, KEYBOARD (VIDEO) (US)			
S230	1-762-751-11	SWITCH, TACTILE (CD) (AEP, UK)			
S230	1-762-875-21	SWITCH, KEYBOARD (CD) (US)			
S231	1-762-751-11	SWITCH, TACTILE (BASS BOOST) (AEP, UK)			
S231	1-762-875-21	SWITCH, KEYBOARD (BASS BOOST) (US)			
S232	1-762-751-11	SWITCH, TACTILE (MUTING) (AEP, UK)			
S232	1-762-875-21	SWITCH, KEYBOARD (MUTING) (US)			
S233	1-762-751-11	SWITCH, TACTILE (SHIFT) (AEP, UK)			
S233	1-762-875-21	SWITCH, KEYBOARD (SHIFT) (US)			
S234	1-762-751-11	SWITCH, TACTILE (0) (AEP, UK)			
S234	1-762-875-21	SWITCH, KEYBOARD (0) (US)			
S235	1-762-751-11	SWITCH, TACTILE (MEMORY/ENTER) (AEP, UK)			
S235	1-762-875-21	SWITCH, KEYBOARD (MEMORY) (US)			
S236	1-762-751-11	SWITCH, TACTILE (TUNER) (AEP, UK)			
S236	1-762-875-21	SWITCH, KEYBOARD (TUNER) (US)			
S237	1-762-751-11	SWITCH, TACTILE (MD/TAPE) (AEP, UK)			
S237	1-762-875-21	SWITCH, KEYBOARD (MD/TAPE) (US)			
S238	1-762-751-11	SWITCH, TACTILE (TV/LD) (AEP, UK)			
S238	1-762-875-21	SWITCH, KEYBOARD (TV/SAT) (US)			
S239	1-762-751-11	SWITCH, TACTILE (RDS PTY) (AEP, UK)			

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Ref. No.	Part No.	Description			Remark
	A-4419-005-A	MAIN BOARD, COMPLETE (US)			
	A-4419-179-A	MAIN BOARD, COMPLETE (AEP, UK)			
		**********			
	3-905-609-01	SCREW (TRANSISTOR)			
	4-812-134-00	RIVET (DIA. 3.5), NYLON			
	7-685-872-09	SCREW +BVTT 3X8 (S)			
		< CAPACITOR >			
C3	1-162-288-31	CERAMIC	330PF	10%	50V (AEP, UK)
C4	1-126-961-11	ELECT	2.2uF	20%	50V (AEP, UK)
C5	1-164-159-11	CERAMIC	0.1uF		50V (AEP, UK)
C6	1-162-291-31	CERAMIC	560PF	10%	50V (AEP, UK)
C7	1-102-527-11	CERAMIC	82PF	5%	50V (AEP, UK)
C8	1-102-852-91	CERAMIC	47PF	5%	50V (AEP, UK)
C9	1-126-795-11	ELECT	10uF	20%	25V (AEP, UK)
C353	1-164-159-11	CERAMIC	0.1uF		50V
C354	1-164-159-11	CERAMIC	0.1uF		50V
C406	1-164-159-11	CERAMIC	0.1uF		50V
C408	1-162-294-31	CERAMIC	0.001uF	10%	50V
C412	1-162-291-31	CERAMIC	560PF	10%	50V
C413	1-164-159-11	CERAMIC	0.1uF		50V
C415	1-164-159-11	CERAMIC	0.1uF		50V
C416	1-164-159-11	CERAMIC	0.1uF		50V
C421	1-126-964-11	ELECT	10uF	20%	50V
C422	1-126-964-11	ELECT	10uF	20%	50V
C427	1-124-252-00	ELECT	0.33uF	20%	50V
C428	1-130-489-00	MYLAR	0.033uF	5%	50V
C429	1-162-282-31	CERAMIC	100PF	10%	50V
C432	1-126-795-11	ELECT	10uF	20%	25V
C433	1-126-795-11	ELECT	10uF	20%	25V
C434	1-162-286-31	CERAMIC	220PF	10%	50V
C435	1-162-286-31	CERAMIC	220PF	10%	50V
C441	1-164-159-11	CERAMIC	0.1uF		50V
C471	1-126-964-11	ELECT	10uF	20%	50V
C472	1-126-964-11	ELECT	10uF	20%	50V
C477	1-124-252-00	ELECT	0.33uF	20%	50V
C478	1-130-489-00	MYLAR	0.033uF	5%	50V
C479	1-162-282-31	CERAMIC	100PF	10%	50V
C492	1-124-464-11	ELECT	0.22uF	20%	50V
C701	1-126-964-11	ELECT	10uF	20%	50V
C702	1-162-282-31	CERAMIC	100PF	10%	50V
C703	1-104-665-11	ELECT	100uF	20%	25V
C705	1-102-233-00	CERAMIC	33PF	10%	500V
C706	1-104-664-11	ELECT	47uF	20%	25V
C707	1-162-282-31	CERAMIC	100PF	10%	50V (AEP,UK)
C710	1-104-664-11	ELECT	47uF	20%	16V
C711	1-137-372-11	FILM	0.022uF	5%	50V
C720	1-162-286-31	CERAMIC	220PF	10%	50V
C721	1-104-666-11	ELECT	220uF	20%	25V
C722	1-126-964-11	ELECT	10uF	20%	50V
C740	1-128-562-11	ELECT	47uF	20%	100V
C741	1-128-562-11	ELECT	47uF	20%	100V
C742	1-126-925-11	ELECT	470uF	20%	10V
C751	1-126-964-11	ELECT	10uF	20%	50V
C752	1-162-282-31	CERAMIC	100PF	10%	50V
C753	1-104-665-11	ELECT	100uF	20%	25V
C755	1-102-233-00	CERAMIC	33PF	10%	500V
C756	1-104-664-11	ELECT	47uF	20%	25V
C757	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK)
C760	1-104-664-11	ELECT	47uF	20%	25V
C761	1-137-372-11	FILM	0.022uF	5%	50V
C770	1-162-286-31	CERAMIC	220PF	10%	50V
C801	1-104-664-11	ELECT	47uF	20%	25V
C802	1-104-664-11	ELECT	47uF	20%	25V
C803	1-107-766-11	ELECT (BLOCK)	8200uF	20%	71V (AEP, UK)
C803	1-125-897-11	ELECT	10000uF	20%	71V (US)
C804	1-107-766-11	ELECT (BLOCK)	8200uF	20%	71V (AEP, UK)
C804	1-125-897-11	ELECT	10000uF	20%	71V (US)
C805	1-130-781-00	FILM	0.22uF	10%	100V (AEP, UK)
C805	1-137-420-11	FILM	0.047uF	10%	100V (US)
C806	1-130-781-00	FILM	0.22uF	10%	100V (AEP, UK)
C806	1-137-420-11	FILM	0.047uF	10%	100V (US)
C807	1-104-664-11	ELECT	47uF	20%	25V
C808	1-104-664-11	ELECT	47uF	20%	25V
C809	1-126-959-11	ELECT	0.47uF	20%	50V
C810	1-126-959-11	ELECT	0.47uF	20%	50V
C811	1-126-942-61	ELECT	1000uF	20%	25V
C812	1-126-941-11	ELECT	470uF	20%	25V
C813	1-101-001-00	CERAMIC	0.001uF		50V
C814	1-101-001-00	CERAMIC	0.001uF		50V
C816	1-104-664-11	ELECT	47uF	20%	25V
C822	1-126-960-11	ELECT	1uF	20%	50V
C950	1-126-767-11	ELECT	1000uF	20%	16V
C951	1-164-097-11	CERAMIC	0.022uF		50V
C952	1-126-960-11	ELECT	1uF	20%	50V
C953	1-124-464-11	ELECT	0.22uF	20%	50V
C954	1-126-964-11	ELECT	10uF	20%	50V
C955	1-164-159-11	CERAMIC	0.1uF		50V
C956	1-164-159-11	CERAMIC	0.1uF		50V
C957	1-164-159-11	CERAMIC	0.1uF		50V
C958	1-164-097-11	CERAMIC	0.022uF		50V
C959	1-164-097-11	CERAMIC	0.022uF		50V
CC02	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK)
CC03	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK)
CC04	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK)
CC05	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK)
CC06	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK)

MAIN

Ref. No.	Part No.	Description			Remark
CC07	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK)
CC12	1-162-306-11	CERAMIC	0.01uF	20%	16V (AEP, UK)
CC13	1-162-306-11	CERAMIC	0.01uF	20%	16V (AEP, UK)
CC52	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK)
CC53	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK)
CC54	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK)
CC55	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK)
CC56	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK)
CC57	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK)
CC62	1-162-306-11	CERAMIC	0.01uF	20%	16V (AEP, UK)
CC63	1-162-306-11	CERAMIC	0.01uF	20%	16V (AEP, UK)
		< CONNECTOR >			
CNP404	1-569-060-11	SOCKET, CONNECTOR 11P			
CNS204	1-568-742-11	SOCKET, CONNECTOR 23P			
CNS205	1-774-289-11	PIN, CONNECTOR (PC BOARD) 15P			
		< DIODE >			
D421	8-719-911-19	DIODE 1SS119-25			
D710	8-719-911-19	DIODE 1SS119-25			
D721	8-719-911-19	DIODE 1SS119-25			
D722	8-719-911-19	DIODE 1SS119-25			
D723	8-719-911-19	DIODE 1SS119-25			
D724	8-719-911-19	DIODE 1SS119-25			
D801	8-719-986-54	DIODE HZS24-1LTA			
D802	8-719-302-38	DIODE RBV-602-01			
D804	8-719-109-85	DIODE RD5.1ES-B2			
D820	8-719-024-99	DIODE 11ES2-NTA2B			
D821	8-719-024-99	DIODE 11ES2-NTA2B			
D822	8-719-024-99	DIODE 11ES2-NTA2B			
D823	8-719-024-99	DIODE 11ES2-NTA2B			
D951	8-719-024-99	DIODE 11ES2-NTA2B			
D952	8-719-024-99	DIODE 11ES2-NTA2B			
D953	8-719-024-99	DIODE 11ES2-NTA2B			
D954	8-719-024-99	DIODE 11ES2-NTA2B			
D955	8-719-911-19	DIODE 1SS119-25			
D956	8-719-911-19	DIODE 1SS119-25			
		< EARTH TERMINAL >			
* G411	1-537-738-21	TERMINAL, EARTH			
* G441	1-537-738-21	TERMINAL, EARTH			
* G951	1-537-738-21	TERMINAL, EARTH			
* G952	1-537-738-21	TERMINAL, EARTH			
		< IC >			
IC1	8-759-541-48	IC BU1924 (AEP, UK)			
IC401	8-759-545-64	IC LC78212			
IC403	8-759-636-74	IC M5218AP-22			
IC701	8-759-326-52	IC uPC2581V			

Ref. No.	Part No.	Description			Remark
IC801	8-759-231-58	IC TA7812S			
IC802	8-759-604-45	IC M5F79M12			
IC803	8-759-604-35	IC M5F78M05L			
IC804	8-759-604-35	IC M5F78M05L			
IC950	8-759-333-83	IC NJM2103D			
		< JACK >			
J402	1-691-887-11	JACK, PIN 6P (TV/SAT AUDIO IN, VIDEO AUDIO IN/OUT) (US)			
J402	1-691-887-11	JACK, PIN 6P (TV/LD AUDIO IN, VIDEO AUDIO IN/OUT) (AEP, UK)			
J403	1-580-825-11	JACK, PIN 6P (CD IN, MD/TAPE REC OUT, MD TAPE IN)			
		< COIL >			
L1	1-410-521-11	INDUCTOR 100uH (AEP, UK)			
L701	1-420-872-00	COIL, AIR-CORE			
L751	1-420-872-00	COIL, AIR-CORE			
		< TRANSISTOR >			
Q303	8-729-922-37	TRANSISTOR 2SD2144S			
Q304	8-729-922-37	TRANSISTOR 2SD2144S			
Q401	8-729-202-67	FET 2SK246-GR3			
Q402	8-729-922-37	TRANSISTOR 2SD2144S			
Q451	8-729-202-67	FET 2SK246-GR3			
Q452	8-729-922-37	TRANSISTOR 2SD2144S			
Q701	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q702	8-729-141-30	TRANSISTOR 2SC3623A-LK			
Q703	8-749-010-25	IC MN2488-OPY-M			
Q704	8-749-010-26	IC MP1620-OPY-M			
Q710	8-729-620-05	TRANSISTOR 2SC2603-EF			
Q720	8-729-140-82	TRANSISTOR 2SA988-PAFAEA			
Q721	8-729-140-82	TRANSISTOR 2SA988-PAFAEA			
Q722	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA			
Q723	8-729-620-05	TRANSISTOR 2SC2603-EF			
Q751	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q752	8-729-141-30	TRANSISTOR 2SC3623A-LK			
Q753	8-749-010-25	IC MN2488-OPY-M			
Q754	8-749-010-26	IC MP1620-OPY-M			
Q770	8-729-140-82	TRANSISTOR 2SA988-PAFAEA			
Q801	8-729-140-97	TRANSISTOR 2SB734-34			
Q802	8-729-119-78	TRANSISTOR 2SC403SP-51			
Q951	8-729-026-68	TRANSISTOR 2SD2525 (TP)			
		< RESISTOR >			
R5	1-249-421-11	CARBON	2.2K	5%	1/4W (AEP, UK)
R6	1-247-807-31	CARBON	100	5%	1/4W (AEP, UK)
R7	1-247-807-31	CARBON	100	5%	1/4W (AEP, UK)
R304	1-249-441-11	CARBON	100K	5%	1/4W
R352	1-249-441-11	CARBON	100K	5%	1/4W
R353	1-249-425-11	CARBON	4.7K	5%	1/4W
R354	1-249-425-11	CARBON	4.7K	5%	1/4W
R403	1-249-417-11	CARBON	1K	5%	1/4W
R404	1-249-417-11	CARBON	1K	5%	1/4W
R405	1-249-417-11	CARBON	1K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R406	1-249-417-11	CARBON	1K	5%	1/4W
R407	1-249-417-11	CARBON	1K	5%	1/4W
R414	1-249-425-11	CARBON	4.7K	5%	1/4W
R418	1-249-417-11	CARBON	1K	5%	1/4W
R419	1-249-417-11	CARBON	1K	5%	1/4W
R420	1-249-441-11	CARBON	100K	5%	1/4W
R421	1-249-417-11	CARBON	1K	5%	1/4W
R422	1-249-441-11	CARBON	100K	5%	1/4W
R431	1-247-843-11	CARBON	3.3K	5%	1/4W
R432	1-247-883-00	CARBON	150K	5%	1/4W
R433	1-249-427-11	CARBON	6.8K	5%	1/4W
R434	1-249-413-11	CARBON	470	5%	1/4W
R435	1-249-418-11	CARBON	1.2K	5%	1/4W
R438	1-249-441-11	CARBON	100K	5%	1/4W
R441	1-249-441-11	CARBON	100K	5%	1/4W
R442	1-249-418-11	CARBON	1.2K	5%	1/4W
R443	1-249-418-11	CARBON	1.2K	5%	1/4W
R444	1-247-903-00	CARBON	1M	5%	1/4W
R447	1-249-416-11	CARBON	820	5%	1/4W
R448	1-249-429-11	CARBON	10K	5%	1/4W
R449	1-249-433-11	CARBON	22K	5%	1/4W
R453	1-249-417-11	CARBON	1K	5%	1/4W
R454	1-249-417-11	CARBON	1K	5%	1/4W
R455	1-249-417-11	CARBON	1K	5%	1/4W
R456	1-249-417-11	CARBON	1K	5%	1/4W
R457	1-249-417-11	CARBON	1K	5%	1/4W
R464	1-247-903-00	CARBON	1M	5%	1/4W
R469	1-247-903-00	CARBON	1M	5%	1/4W
R470	1-249-441-11	CARBON	100K	5%	1/4W
R471	1-249-417-11	CARBON	1K	5%	1/4W
R472	1-249-441-11	CARBON	100K	5%	1/4W
R481	1-247-843-11	CARBON	3.3K	5%	1/4W
R482	1-247-883-00	CARBON	150K	5%	1/4W
R483	1-249-427-11	CARBON	6.8K	5%	1/4W
R484	1-249-413-11	CARBON	470	5%	1/4W
R491	1-249-441-11	CARBON	100K	5%	1/4W
R492	1-247-903-00	CARBON	1M	5%	1/4W
R494	1-247-903-00	CARBON	1M	5%	1/4W
R701	1-249-417-11	CARBON	1K	5%	1/4W
R702	1-249-439-11	CARBON	68K	5%	1/4W
R703	1-247-828-11	CARBON	750	5%	1/4W (AEP, UK)
R703	1-249-412-11	CARBON	390	5%	1/4W (US)
R704	1-249-439-11	CARBON	68K	5%	1/4W
R705	1-249-429-11	CARBON	10K	5%	1/4W
R706	1-249-435-11	CARBON	33K	5%	1/4W
R707	1-249-435-11	CARBON	33K	5%	1/4W
R710	1-247-840-00	CARBON	2.4K	5%	1/4W
R711	1-249-440-11	CARBON	82K	5%	1/4W
R712	1-249-431-11	CARBON	15K	5%	1/4W
R713	1-249-414-11	CARBON	560	5%	1/4W
⚠R714	1-249-409-11	CARBON	220	5%	1/4W F
⚠R715	1-249-409-11	CARBON	220	5%	1/4W F
⚠R716	1-233-352-41	ENCAPSULATED COMPONENT (0.22+0.22)			
⚠R717	1-249-393-11	CARBON	10	5%	1/4W F
R718	1-249-425-11	CARBON	4.7K	5%	1/4W
⚠R719	1-249-403-11	CARBON	68	5%	1/4W F

Ref. No.	Part No.	Description			Remark
R720	1-249-419-11	CARBON	1.5K	5%	1/4W
R721	1-249-425-11	CARBON	4.7K	5%	1/4W (AEP, UK)
R721	1-249-427-11	CARBON	6.8K	5%	1/4W (US)
⚠R722	1-249-403-11	CARBON	68	5%	1/4W F
R723	1-249-437-11	CARBON	47K	5%	1/4W
R724	1-249-425-11	CARBON	4.7K	5%	1/4W
R725	1-249-427-11	CARBON	6.8K	5%	1/4W
R726	1-249-417-11	CARBON	1K	5%	1/4W
R727	1-249-427-11	CARBON	6.8K	5%	1/4W
R728	1-249-429-11	CARBON	10K	5%	1/4W
R729	1-249-426-11	CARBON	5.6K	5%	1/4W
R730	1-249-426-11	CARBON	5.6K	5%	1/4W
⚠R739	1-249-393-11	CARBON	10	5%	1/4W F
⚠R740	1-249-393-11	CARBON	10	5%	1/4W F
R743	1-249-425-11	CARBON	4.7K	5%	1/4W
R751	1-249-417-11	CARBON	1K	5%	1/4W
R752	1-249-439-11	CARBON	68K	5%	1/4W
R753	1-247-828-11	CARBON	750	5%	1/4W (AEP, UK)
R753	1-249-412-11	CARBON	390	5%	1/4W (US)
R754	1-249-439-11	CARBON	68K	5%	1/4W
R755	1-249-429-11	CARBON	10K	5%	1/4W
R756	1-249-435-11	CARBON	33K	5%	1/4W
R757	1-249-435-11	CARBON	33K	5%	1/4W
R760	1-247-840-00	CARBON	2.4K	5%	1/4W
R761	1-249-440-11	CARBON	82K	5%	1/4W
R763	1-249-414-11	CARBON	560	5%	1/4W
⚠R764	1-249-409-11	CARBON	220	5%	1/4W F
⚠R765	1-249-409-11	CARBON	220	5%	1/4W F
⚠R766	1-233-352-41	ENCAPSULATED COMPONENT (0.22+0.22)			
⚠R767	1-249-393-11	CARBON	10	5%	1/4W F
R768	1-249-389-11	CARBON	4.7	5%	1/4W
R770	1-249-419-11	CARBON	1.5K	5%	1/4W
R771	1-249-425-11	CARBON	4.7K	5%	1/4W (AEP, UK)
R771	1-249-427-11	CARBON	6.8K	5%	1/4W (US)
R772	1-249-437-11	CARBON	47K	5%	1/4W
R773	1-249-437-11	CARBON	47K	5%	1/4W
R801	1-249-421-11	CARBON	2.2K	5%	1/4W
⚠R802	1-249-389-11	CARBON	4.7	5%	1/4W F (AEP, UK)
⚠R802	1-249-405-11	CARBON	100	5%	1/4W F (US)
R821	1-249-425-11	CARBON	4.7K	5%	1/4W
R822	1-249-437-11	CARBON	47K	5%	1/4W
R950	1-249-421-11	CARBON	2.2K	5%	1/4W
R951	1-249-428-11	CARBON	8.2K	5%	1/4W
R952	1-249-431-11	CARBON	15K	5%	1/4W
R953	1-249-433-11	CARBON	22K	5%	1/4W
R954	1-249-437-11	CARBON	47K	5%	1/4W
R955	1-249-429-11	CARBON	10K	5%	1/4W
R956	1-247-843-11	CARBON	3.3K	5%	1/4W
R957	1-249-417-11	CARBON	1K	5%	1/4W
R958	1-249-401-11	CARBON	47	5%	1/4W
R960	1-249-422-11	CARBON	2.7K	5%	1/4W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MAIN | **POWER SWITCH** | **PRIMARY** | **SECONDARY**

SPK SWITCH | **STANDBY TRANS** | **TONE**

Ref. No.	Part No.	Description			Remark
RR04	1-249-393-11	CARBON	10	5%	1/4W (AEP, UK)
RR05	1-249-393-11	CARBON	10	5%	1/4W (AEP, UK)
RR54	1-249-393-11	CARBON	10	5%	1/4W (AEP, UK)
RR55	1-247-398-11	CARBON	10	5%	1/4W (AEP, UK)
		< RELAY >			
RY701	1-515-921-11	RELAY (12V)			
		< TERMINAL >			
TM701	1-537-376-11	TERMINAL BOARD (SP) (SPEAKERS A/B)			
		< VIBRATOR >			
X1	1-579-900-21	VIBRATOR, CRYSTAL (4.33MHz) (AEP, UK)			
**********					
	1-673-030-11	POWER SWITCH BOARD **********			
		< CONNECTOR >			
CNS206	1-573-105-11	CONNECTOR, PC BOARD 4P			
		< SWITCH >			
S240	1-762-875-21	SWITCH, KEYBOARD (**I**/⏻)			
**********					
	1-673-028-11	PRIMARY BOARD **********			
	1-533-293-11	FUSE HOLDER			
		< FUSE >			
⚠F901	1-532-503-11	FUSE (T1.6AL/250V) (AEP, UK)			
⚠F901	1-576-109-11	FUSE (5A/125V) (US)			
**********					
	1-673-029-11	SECONDARY BOARD **********			
		< CONNECTOR >			
CNP801	1-764-478-11	PIN, CONNECTOR (PC BOARD) 9P			
		< RESISTOR >			
⚠R810	1-249-381-11	CARBON	1	5%	1/4W F
⚠R811	1-249-381-11	CARBON	1	5%	1/4W F
**********					
	1-673-027-11	SPK SWITCH BOARD **********			
		< CONNECTOR >			
CNP703	1-764-474-11	PIN, CONNECTOR (PC BOARD) 5P			
CNP704	1-764-473-11	PIN, CONNECTOR (PC BOARD) 3P			
CNS702	1-770-378-11	CONNECTOR, BOARD TO BOARD 5P			

Ref. No.	Part No.	Description			Remark
		< JACK >			
J741	1-750-733-11	JACK (LARGE TYPE) (PHONES)			
		< RESISTOR >			
R741	1-247-753-11	CARBON	1.2K	5%	1/2W
R742	1-247-753-11	CARBON	1.2K	5%	1/2W
R791	1-247-753-11	CARBON	1.2K	5%	1/2W
R792	1-247-753-11	CARBON	1.2K	5%	1/2W
		< SWITCH >			
S701	1-762-529-11	SWITCH, PUSH (2 KEY) (SPEAKERS A/B)			
**********					
	1-673-026-11	STANDBY TRANS BOARD **********			
	1-533-233-21	HOLDER, FUSE (AEP)			
		< JACK >			
⚠CNJ902	1-785-834-11	OUTLET (1P) (US)			
⚠CNJ902	1-785-834-11	OUTLET (AC) (AEP)			
		< CONNECTOR >			
CNP802	1-779-495-11	PLUG, CONNECTOR PIN 4P			
CNP901	1-564-321-00	PIN, CONNECTOR 2P			
		< DIODE >			
D957	8-719-911-19	DIODE 1SS119-25			
		< FUSE >			
⚠F902	1-532-464-51	FUSE (T2.5AL/250V) (AEP)			
		< EARTH TERMINAL >			
* G900	1-537-738-21	TERMINAL, EARTH (US)			
		< RESISTOR >			
⚠R901	1-202-725-00	SOLID	3.3M	10%	1/2W (US)
		< RELAY >			
⚠RY901	1-755-018-11	RELAY			
		< TRANSFORMER >			
⚠T902	1-433-685-11	TRANSFORMER, POWER (UK)			
⚠T902	1-433-686-11	TRANSFORMER, POWER (US)			
⚠T902	1-450-361-11	TRANSFORMER, POWER (AEP)			
**********					
	1-673-025-11	TONE BOARD **********			
		< CAPACITOR >			
C421	1-137-440-11	FILM	0.018uF	5%	50V
C422	1-124-463-00	ELECT	0.1uF	20%	50V
C423	1-137-368-11	FILM	0.0047uF	5%	50V
C424	1-137-372-11	FILM	0.022uF	5%	50V
C471	1-137-440-11	FILM	0.018uF	5%	50V

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Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
C472	1-124-463-00	ELECT	0.1uF	20%	50V
C473	1-137-368-11	FILM	0.0047uF	5%	50V
C474	1-137-372-11	FILM	0.022uF	5%	50V
		< RESISTOR >			
R420	1-249-415-11	CARBON	680	5%	1/4W
R421	1-249-431-11	CARBON	15K	5%	1/4W
R422	1-249-422-11	CARBON	2.7K	5%	1/4W
R423	1-247-903-00	CARBON	1M	5%	1/4W
R424	1-247-903-00	CARBON	1M	5%	1/4W
R470	1-249-415-11	CARBON	680	5%	1/4W
R471	1-249-431-11	CARBON	15K	5%	1/4W
R472	1-249-422-11	CARBON	2.7K	5%	1/4W
R473	1-247-903-00	CARBON	1M	5%	1/4W
R474	1-247-903-00	CARBON	1M	5%	1/4W
		< VARIABLE RESISTOR >			
RV421	1-223-962-11	RES, VAR, CARBON 100K/100K (BASS)			
RV422	1-223-963-11	RES, VAR, CARBON 125K/125K (TREBLE)			
RV423	1-238-965-21	RES, VAR, CARBON 100K/100K (BALANCE)			
**********					
	1-673-024-11	VOLUME BOARD			
		**********			
		< CAPACITOR >			
C420	1-162-207-31	CERAMIC	22PF	5%	50V
C425	1-126-795-11	ELECT	10uF	20%	25V
C426	1-126-795-11	ELECT	10uF	20%	25V
C427	1-124-463-00	ELECT	0.1uF	20%	50V
C430	1-104-942-11	ELECT	1uF	20%	50V
C431	1-104-942-11	ELECT	1uF	20%	50V
C470	1-162-207-31	CERAMIC	22PF	5%	50V
C475	1-126-795-11	ELECT	10uF	20%	25V
C476	1-126-795-11	ELECT	10uF	20%	25V
C477	1-124-463-00	ELECT	0.1uF	20%	50V
		< CONNECTOR >			
CNP202	1-770-388-11	PIN, CONNECTOR (PC BOARD) 4P			
CNP401	1-770-390-11	PIN, CONNECTOR (PC BOARD) 6P			
CNS403	1-569-060-11	SOCKET, CONNECTOR 11P			
		< IC >			
IC404	8-759-636-74	IC M5218AP-22			
		< RESISTOR >			
R425	1-249-429-11	CARBON	10K	5%	1/4W
R426	1-249-439-11	CARBON	68K	5%	1/4W
R427	1-249-417-11	CARBON	1K	5%	1/4W
R430	1-249-437-11	CARBON	47K	5%	1/4W
R475	1-249-429-11	CARBON	10K	5%	1/4W
R476	1-249-439-11	CARBON	68K	5%	1/4W
R477	1-249-417-11	CARBON	1K	5%	1/4W
R480	1-249-437-11	CARBON	47K	5%	1/4W
		< VARIABLE RESISTOR >			
RV404	1-225-769-11	RES, VAR, CARBON 100K/100K (VOLUME)			
**********					

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
61	1-773-195-11	WIRE (FLAT TYPE) (23 CORE) (AEP)	
61	1-782-084-11	WIRE (FLAT TYPE) (23 CORE) (US)	
64	1-769-941-11	WIRE (FLAT TYPE) (11 CORE)	
⚠107	1-777-071-21	CORD, POWER (AEP)	
⚠107	1-783-820-11	CORD, POWER (US)	
⚠107	1-790-226-11	CORD, POWER (UK)	
109	1-493-407-51	TUNER PACK (AEP, UK)	
109	1-693-408-61	TUNER PACK (US)	
110	1-773-001-11	WIRE (FLAT TYPE) (15 CORE)	
⚠T901	1-433-712-11	TRANSFORMER, POWER (AEP, UK)	
⚠T901	1-433-720-11	TRANSFORMER, POWER (US)	
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#2	7-685-871-01	SCREW +BVTT 3X6 (S)	
#3	7-685-881-09	SCREW +BVTT 4X8 (S)	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-418-295-11	REMOTE COMMANDER (RM-U204)	
	1-501-374-11	ANTENNA, LOOP	
	1-501-594-11	ANTENNA (FM) (AEP, UK)	
	3-866-250-11	MANUAL, INSTRUCTION (ENGLISH) (US)	
	3-866-250-21	MANUAL, INSTRUCTION (FINNISH, GERMAN, SPANISH, ITALIAN, PORTUGUESE) (AEP)	
	3-866-250-31	MANUAL, INSTRUCTION (ENGLISH, FRENCH, DUTCH, SWEDISH, DANISH) (AEP, UK)	
	4-861-643-01	COVER, BATTERY (FOR RM-U204)	

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Sony Corporation
Home A&V Products Company

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